

# Wahpe Woyaka pi

## ( Talking Leaf )

South Dakota Council Teachers of Mathematics Newsletter

### Presidential Ponderings

News break. We have a new math curriculum specialist in Pierre. Bill has gone back to the classroom and Misty Roberts has taken his place. Welcome Misty.

Hope your school year is off to a great start. For a break from correcting papers Friday I cleaned my middle desk drawer, the one that has all the pencils, pens, paper clips... while my students took a test. It is amazing all the stuff that will fit in that drawer. Of course, I paid for my cleaning break by correcting papers this weekend but the drawer looks so good.

Wish it were as easy to clean up all the Common Core mess. Who knew that a set of math standards would cause such controversy? Apparently I spoke too soon in my summer ponderings. Letters to the editor, meetings across the state, op eds, legislators writing laws against them, public forums. Where were these people in 2010? It would be nice to blame the ELA standards but let's look at the objections from a math perspective.

While some people object to the math standards themselves most don't object to the sequence of skills (although the high school ones are a little daunting to this MS teacher), the fact that some kind of standards have been around for years, nor that there are things that students should know. There is an underlying complaint that they were imposed by the federal government. If a state was looking for Race to the Top funds there was certainly pressure to adopt the standards so if you want to object for that reason you have a leg to stand on. Does that make them not worth using? Are the old ones better?

I think the bigger objection is to standardized testing in general and how the test data is used. The original testing was mandated by No Child Left Behind legislation. Will there be teaching to the test? Sure there will be. I am not so naïve to think this won't happen. My email is already starting to fill with offers to purchase series of questions that are just like Smarter Balanced. Will some districts see a narrowing of curriculum by teachers, curriculum directors or school districts who should know better? Absolutely. That isn't the fault of the standards. It is the fault of the short-sighted focus on one score.

Have we tried to go beyond what the testing was intended to do? I think so. I call it the Bridesmaid Dress Syndrome. You spend all that money on the dress, surely it must be good for something else. New Year's Eve party? Another wedding? Summer party? Everything you try to use it for just isn't quite right. It is still a bridesmaid's dress. Same with the NCLB testing. It was initially designed to rank school districts, tell us if our students were proficient and how we were doing with certain subgroups of students. However based upon the amount of money spent and the time and effort involved it is only natural to cast around for something else to do with this bridesmaid's dress. Formative assessment? Generally that requires the students to still be in your classroom. Mine have moved on to the high school. While the new Smarter Balanced test was intended to give us more information it has been scaled back and the test creators are walking back their original claims. Will it really be more than a new, improved form of the DSTEP? Evaluate teachers? How do we use a single test to do that if we are using a growth model? Show me the algorithm used for that AND explain how it works.

In addition there is a concern about how the data will be used. I have read claims that we will be collecting eye movements, facial expressions and posture responses to stress. Now seriously people. I can tell you in the middle school eye movements consist of eye rolling, facial expressions are generally not nearly concerned enough from my perspective and posture tends to give over to slouching. There are however those who express concerns that I am not qualified to answer. Here is a link to Diane Ravitch's blog with a listing of concerns about data usage. <http://dianeravitch.net/2013/04/08/why-is-the-us-department-of-education-weakening-ferpa/> Do your research and make your judgment.



FALL 2013

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#### Calendar Notes:

- SDCTM/SDSTA Conference February 6–8, 2014
- PAEMST Applications Due May 1, 2013

*continued*



*“...Keep plugging away to give our students the best education we can.”*

*For more information, go to [www.nctm.org/ccssminst/](http://www.nctm.org/ccssminst/)*

*“...Don't forget to join Illuminations on Facebook and Twitter.”*

## Presidential Ponderings, *continued*

So what am I going to do? What every other SDCTM member I know is doing. Keep plugging away to give our students the best education we can. Follow the Common Core standards and focus on the standards for mathematical practice. This development in particular warms my heart as NCTM has been stressing their importance since they were known as the NCTM process standards. I must admit it makes me feel vindicated by SDCTM's efforts to get the “old” standards to address mathematical practice (a losing battle) while at the same time a little insulted every time a Common Core facilitator tells me that this is a new way of teaching math. Giving them the benefit of the doubt, maybe it's new to them.

I look forward to seeing you in Huron in Feb. See page 17 of this newsletter for the registration form and check SDCTM.org for information. Have a great school year.

Ellie Cooch  
SDCTM President

## NCTM Offers Discounts to New Members

To encourage new membership, the National Council of Teachers of Mathematics is offering special discounts to join. NCTM membership connects you with exclusive resources and the support of nearly 80,000 people working toward improving mathematics education. The discount is \$20 off full membership, \$10 off e-membership, and \$5 off student membership. This discount is only valid on new memberships, and is valid through 6/30/14.

To join NCTM, visit [www.nctm.org/membership](http://www.nctm.org/membership). To obtain the discount, enter the following code at checkout: ADE614. If you are not already enjoying the many benefits of NCTM membership, I would encourage you to learn more at [www.nctm.org](http://www.nctm.org)

## NCTM Interactive Institutes

NCTM will hold institutes called “Cutting to the Common Core” designed to increase your knowledge of mathematics content related to the Common Core domains in the elementary, middle, and high school grades or—for district and school leaders—the new institute designed to help principals and administrators gain a deeper understanding of the Common Core challenges and pathways to success in schools. These institutes will be held at the Renaissance Orlando at Sea World on February 14 and 15, 2014. Early registration at a reduced rate ends December 13. For more information, go to <http://www.nctm.org/ccssminst/>

## NCTM Illuminations

NCTM Illuminations is designed to provide standards-based resources that improve the teaching and learning of mathematics for all students. These NCTM resources include 108 online activities, 607 standards-based lesson plans and links to 724 mathematics resources on the web. If you haven't visited <http://illuminations.nctm.org/> in a while, it is worth your time to take a look and see all of the new resources available. NCTM has 5 free mobile apps: Pick-a-Path, Deep Sea Duel, Okta's Rescue, Equivalent Fractions, and Math Concentration, available at <http://www.nctm.org/mobileapps/>. Don't forget to join Illuminations on [Facebook](#) and [Twitter](#)! You'll get Brainteasers, links to interesting articles, and more!



## Verizon Challenge

This Verizon Challenge is for students to come up with App ideas. They can win a Samsung Galaxy Tablet and \$20,000 for their school.

The link to the flyer is:

[http://appchallenge.tsaweb.org/sites/appchallenge.tsaweb.org/files/STEM\\_App\\_Challenge\\_2013-14\\_Flyer\\_v6.pdf](http://appchallenge.tsaweb.org/sites/appchallenge.tsaweb.org/files/STEM_App_Challenge_2013-14_Flyer_v6.pdf)

General info can be found at <http://appchallenge.tsaweb.org/>

Best,

Misty Roberts  
Math Program Specialist  
Office of Curriculum, South Dakota Department of Education (DOE)  
800 Governors Drive  
Pierre, SD 57501-2291

*“(Students) can win a ...tablet...and \$20,000 for their school.”*

## Share the Wealth

I like to include activities in each newsletter (there are three in this issue). I know that we have some of the world’s best math teachers teaching in the state....and some of the most generous. However, I’ve come to realize that we are also some of the most modest. You never think what you are doing is “good enough” to include in the newsletter. Let me assure you that it is! If it works for your students, I know that at least one other teacher would find it helpful as well. I challenge you each to submit at least one activity...no matter how small or how large. You can include pictures of your students (and you if you’d like). Past submissions have sometimes included a student worksheet, others have not. It can be as simple or as complex as you are comfortable with. Sometimes, a simple idea (no handouts, pictures etc) can be like a gold mine to the teacher that is looking for just the right thing.

Send submissions to: [smcquade2@sfcss.org](mailto:smcquade2@sfcss.org)





*“...by providing \$400 stipends to second through fifth year math and science teachers to attend the SDSTA/SDCTM conference.”*

## **Marian Fillbrandt Stipends**

Marian Fillbrandt graduated from South Dakota State in 1933 with a Mathematics major. She spent many years teaching math and science. She established the Fillbrandt Endowment at South Dakota State to help South Dakota math and science teachers. A committee of faculty, along with Jeff Nelson with the SDSU Foundation, has determined that this endowment can be best utilized by providing \$400 stipends to second through fifth year math and science teachers to attend the SDSTA/SDCTM conference. This will allow new teachers in rural areas to interact with their colleagues with similar professional interests.

The \$400 stipend is intended to defray the costs of conference registration, accommodations, a substitute teacher for the Friday of the conference if a district will not provide one, and other costs associated with conference attendance.

If you are selected for this stipend, you will be required to write a brief report at the end of the conference stating how the stipend benefited you and what you learned at the conference that you plan to use in your classroom. If you are selected, but are unable to attend for some reason, the stipend money will be returned to the endowment fund. The selection committee will take financial need into account during the selection process.

The application deadline is December 1st. To apply, go to <http://Fillbrandt-Teacher-Stipend.questionpro.com>

## **Free Conference Registration ....**

At a drawing held following the 2013 conference Barb Glanzer of Aberdeen won a free conference registration for the 2014 conference. Congrats Barb! See you in Huron!

## **Interesting/Useful Links ....**

A life or death application of slope  
<http://pages.citebite.com/v1x8r5y3f9msi>

The Myth of 'I'm Bad at Math'  
<http://www.theatlantic.com/education/print/2013/10/the-myth-of-im-bad-at-math/280914/>

The Stereotypes About Math That Hold Americans Back  
[http://www.theatlantic.com/education/archive/2013/11/the-stereotypes-about-math-that-hold-americans-back/281303/?utm\\_content=buffer6ddf1&utm\\_source=buffer](http://www.theatlantic.com/education/archive/2013/11/the-stereotypes-about-math-that-hold-americans-back/281303/?utm_content=buffer6ddf1&utm_source=buffer)



## 2013 PAEMST State Finalists

Lori Wagner, Lindsey Brewer and Bjorg Remmers-Seymour are announced as the State Finalists for 2013 Secondary Presidential Awards.

Lindsey Brewer has been teaching for eight years, seven years in her current position at Huron High School, Huron, SD. She currently teaches two sections of Pre-Calculus, two sections of Functions, Statistics and Trigonometry and a double block section of Algebra. She graduated from Huron University in 2004 with a BS in both Math Education and Biology and a double minor in Technology and Health. She has a MS in Curriculum and Instruction from Black Hills State University in 2007.

Bjorg Remmers-Seymour has been teaching for ten years, the last year in her current position at Rapid City Academy in Rapid City, SD. She currently teaches three double sections of Integrated Math 1. Bjorg graduated from Black hills state University in 2001 with a BS in Elementary Education and minor in Middle School. She became certified in 7-12 mathematics and 5-8 mathematics.

Lori Wagner has been teaching for 23 years, the last eleven in her current position at Webster Area High School, Webster, SD. She currently teaches General Mathematics, Algebra II, Advanced Algebra II, and Pre-Calculus and Trigonometry. In 1989 she graduated from Northern State University with a BS in Mathematics Education.

## 2014 PAEMST Nominations

**Know a Great K-6 Math Teacher? Nominate him or her to receive the Presidential Teaching Award!**

We're looking for outstanding K-6 math teachers for the 2014 Presidential Awards for Excellence in Mathematics and Science Teaching. The awards are sponsored by the White House and administered by the National Science Foundation.

**Every year up to 108 National Awardees each receive** a \$10,000 award, a paid trip for two to Washington, DC to attend a week-long series of networking opportunities and recognition events, and a special citation signed by the President of the United States.

The program is now accepting nominations of K-6 teachers for the nation's highest honor for mathematics and science teachers. Anyone can nominate a teacher. Teachers should submit completed application materials by May, 2014. **For more information, including** nomination and application forms, please visit [www.nsf.gov/pa](http://www.nsf.gov/pa) or [www.sdctm.org](http://www.sdctm.org) and click on the awards link.

*“Congratulations to Lori Wagner, Lindsey Brewer and Bjorg Remmers-Seymour!”*

*“...now accepting nominations of K-6 teachers!”*



*“..my top 3 FREE resources that I have currently incorporated into my classroom.”*

## 9-12 Spotlight

Greetings! My name is Lindsey Brewer and I am your new Secondary Liaison!! This is my 10<sup>th</sup> year teaching high school mathematics. I taught my first year in Howard, since then I have been teaching in Huron. I have had the wonderful opportunity to teach about every math class offered at Huron High School. I have taught Algebra I, Algebra II, and Integrated Math in the past. Every year, I happily teach Pre-Calculus and FST (Functions, Statistics, and Trigonometry). This year I am teaching Sheltered Geometry. AP Calc is the only course I haven't taught...I hope not to. I am a firm believer in the importance and benefits of technology. I was the high school technology integrationist for two years. Although budget cuts have made it an unpaid position I still continue the duties because I enjoy helping my staff become 21<sup>st</sup> Century teachers and providing powerful learning opportunities for our students. Huron HS is a one-to-one tablet school for our 10<sup>th</sup>-12<sup>th</sup> graders. Every teacher has a HP tablet and now also an iPad. All of our classrooms are equipped with a wireless LCD projector and an Apple TV.

I try to make my classroom very technology enriched both with free resources and with the ones you have to pay a little money to use. Here is my top 3 FREE resources that I have currently incorporated into my classroom. **1. Jing** (<http://www.techsmith.com/jing.html>) A screencasting software from Tech Smith. Jing allows you to create short videos of anything you can see on your computer screen while your computer microphone records your voice as the teacher. I use these Jing screencasts a couple of different ways. I post videos on my website of additional examples for students to watch outside of the classroom while they are working on their assignment. For absent students, these screencasts provide them with a recording of the in-class notes. I also have started to require my students to watch a screencast before class as homework to prepare for the new lesson. The feedback I have received from my students has been very positive and they even request these Jing screencasts. Since they are videos the students can watch and rewatch, they can also pause and rewind, which allows them to learn at their own pace. (Free account only allows you to record 5 minutes videos you can upgrade for some \$\$ to record longer videos with more features) **2. Padlet** (<http://padlet.com/>) Which used to be called Wallwisher is an on-line bulletin board. You get to build a blank wall (basically a digital on-line bulletin board) then share the URL to the wall with your class, then everybody can post on the wall. Posts can include links to other websites, videos, pictures, you can upload files, or just post a note. I have used Padlet two different ways in my classroom. First, when we start a new topic I like students to post anything and everything they know about the topic. It allows me to address their background knowledge. Review days is another time I frequently use Padlet. I post information about the up-coming test along with study resources. My students can post questions they have about the test, then either I or even other students post answers. (Warning – watch for students making the wall into a chat room) **3. Poll Everywhere** (<http://www.polleverywhere.com/>) This is a FREE classroom response systems that uses cell phones, Twitter, or via a website. As the teacher you create the question, it can be multiple choice, true/false, or free response. The students see the question and respond either by text message on their cell phone, Tweet it on Twitter, or through the website. No matter the collection method the response are all collected and displayed numerically and graphically in real time. This is a great way to engage your students while you can informally access what they know. (The free account is limited to 40 responses per poll you can up-grade to receive more responses and include more features).

Please feel free to contact me with any questions, concerns, or suggestions! Have a wonderful 2013-2014 school year.

Lindsey L. Brewer NBCT





## Math Humor



## Share the Classroom Treasures

“Share the Classroom Treasures” has been a huge success at recent conferences. It is amazing the number of items that change hands! What a wonderful way to support one another. Don’t forget to bring your “Treasures” that are no longer of use to yourself...and be sure to stop by the “Sharing” space. You just might find something that you can’t live without. :)



Remember ... Leave school items at school...only bring personal items to “share”.





## Constructions in a CC Geometry Curriculum

Many of us are faced with the increased rigor of a Common Core Curriculum and with that rigor comes an increasing amount of content. The Geometry curriculum has always felt “full” and robust. Even though many of us eliminated proof writing, or greatly de-emphasized it, we have continued to teach reasoning and logical thinking as a part of the high school Geometry curriculum. I, for one, missed teaching constructions and am happy to see a renewed emphasis on them. The text I was using relegated constructions to a single chapter towards the end of the book. I, therefore, taught them in a short unit, when it fit, often in the days leading up to Easter or some other break. My new text has a more traditional approach, presenting the constructions as they “fit” with the material. However, as we strive to teach all that the geometry curriculum encompasses, a traditional approach to teaching constructions felt overly time consuming and cumbersome. I often struggle to get through all of the content I need to get through without the time consuming activity of handing out the equipment, walking students through each step of a construction and collecting the equipment at the end of the class. And someone always needs to check out the equipment...which is shared by 5 different sections of Geometry at O<sup>+</sup>G. But I like constructions and I like the connections that students make when they complete a construction. Another challenge was that I use a tablet pc for class notes and I have not yet found a way to demonstrate a construction and ink it on my computer simultaneously for archival purposes. (I post copies of my notes daily for students to use as a reference.)

*“...I like the connections that students make when they complete a construction.”*

A colleague shared his plan with me last spring (he teaches Advanced Geometry and I teach “regular” Geometry and Informal Geometry). He had found a website that he really liked and planned to use with his students. His plan was to have his students watch the video on their own time and complete a packet of constructions at intervals throughout the school year. I “borrowed” his idea and came up with a packet of constructions that suited my students and my text. The cover page (shown on page 11 of this newsletter) explains what constructions are and why we do them. Each following page (a sample page is on page 12 of this newsletter) has one of the constructions on it. The link for the construction video is at the top of each page. Space for practicing the construction as well as making notes about the directions is included as well. The rest of the page is devoted to practicing the construction as well as using it to complete other, related constructions.

*If you would like to see the full Constructions packet, e-mail me at [smcquade2@sfcss.org](mailto:smcquade2@sfcss.org)*

First and foremost, we required students to have and bring their own straightedge, compass (and protractor). I would caution you to make sure that students understand that the really inexpensive sets are often poorly constructed. This was actually the tough part. I intentionally keep only two “sets” in my desk so that students know that if they don’t have theirs, they will have to borrow from one another and wait. Secondly, I found that I was more comfortable walking my students through the process for the first construction so that they understood my expectations. Beyond that, however, I expect them to complete the appropriate construction page in their Constructions packet on their own. I do remind students when they have a construction to do and list it as a part of the homework. I have had students choose to not use the videos and work through the constructions using the directions in the text. Several have told me that the videos help immensely. As with anything, what works for one doesn’t necessarily work for all. I do choose to “talk through” the constructions before assigning them and have found that, depending on the construction, a “re-cap” the day after is sometimes a good idea as well. Overall, the independent nature of this method has been quite successful for me.

Sheila McQuade  
O<sup>+</sup>Gorman High School.



Geometry constructions are completed with only a compass and a straightedge. A true construction is completed without using a ruler to measure length or a protractor to measure an angle.

**“Why we learn about constructions**

The ancient Greek mathematician Euclid is the acknowledged inventor of geometry. He did this over 2000 years ago, and his book "Elements" is still regarded as the ultimate geometry reference. In that work, he uses these construction techniques extensively, and so they have become a part of the geometry field of study. They also provide a greater insight into geometric concepts and give us tools to draw things when direct measurement is not appropriate.



**Why did Euclid do it this way?**

Why didn't Euclid just measure things with a ruler and calculate lengths? For example, one of the basic constructions is bisecting a line (dividing it into two equal parts). Why not just measure it with a ruler and divide by two?

The answer is surprising. The Greeks could not do arithmetic. They had only whole numbers, no zero, and no negative numbers. This meant they could not for example divide 5 by 2 and get 2.5, because 2.5 is not a whole number - the only kind they had. Also, their numbers did not use a positional system like ours, with units, tens, hundreds etc, but more like the Roman numerals. In short, they could perform very little useful arithmetic.

So, faced with the problem of finding the midpoint of a line, they could not do the obvious - measure it and divide by two. They had to have other ways, and this led to the constructions using compass and straightedge or ruler. It is also why the straightedge has no markings. It is definitely not a graduated ruler, but simply a pencil guide for making straight lines. Euclid and the Greeks solved problems graphically, by drawing shapes, as a *substitute* for using arithmetic.”

<http://www.mathopenref.com/constructions.html>

“Euclid, fl. 300 BC, also known as **Euclid of Alexandria**, was a Greek mathematician, often referred to as the "Father of Geometry". . . His *Elements* is one of the most influential works in the history of mathematics, serving as the main textbook for teaching mathematics (especially geometry) from the time of its publication until the late 19th or early 20th century.”

<http://en.wikipedia.org/wiki/Euclid>

You will be required to learn several constructions this year. You will use <http://www.mathopenref.com/tocs/constructionstoc.html> and this handout to master the required constructions (you will not need to learn and master all of the constructions listed on the above website). While clicking through the animation and practicing the constructions is intended to be an independent activity, I will be happy to work through any of the constructions with you. They are included in the homework assignments and they will be included on the quizzes and tests.

- p. 2 L1.2 Copy a segment
- p. 3 L1.3 Bisect a segment
- p. 4 L1.4a Copy an angle
- p. 5 L1.4b Bisect an angle
- p. 6 L1.5a Construct a line perpendicular to a line through a point on the line
- p. 7 L1.5b Construct a line perpendicular to a line through a point NOT on the line
- p. 8 L3.5 Construct a line parallel to a given line through a point not on the line
- p. 9 L4.4a Construct a triangle using  $SSS \cong \Delta's$
- p.10 L4.4b Construct a triangle using  $SAS \cong \Delta's$
- p. 11 L4.5 Construct a triangle using  $ASA \cong \Delta's$
- p. 12 L5.1a Construct a perpendicular bisector of a side of a triangle
- p. 13 L5.1b Construct the bisector of an angle of the triangle
- p. 14 L5.2a Construct a median of a triangle
- p. 15 L5.2b Construct an altitude of a triangle.
- p. 16 L7.4 Trisect a segment

**Expectations**

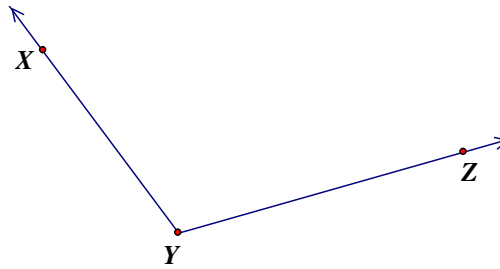
For each construction, click through the animation and practice the construction in the space provided. Write out or list the steps in your own words...in a way that makes sense to you. Finally, complete the sample construction(s) provided. DO NOT erase compass markings or other “incidental” marks.

L1.4b Bisect an angle <http://www.mathopenref.com/constbisectangle.html>

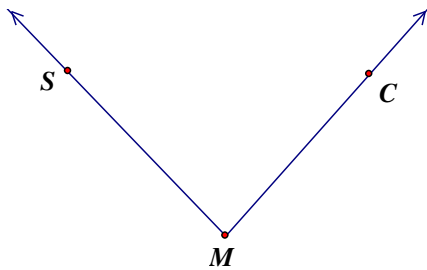
Practice

Steps

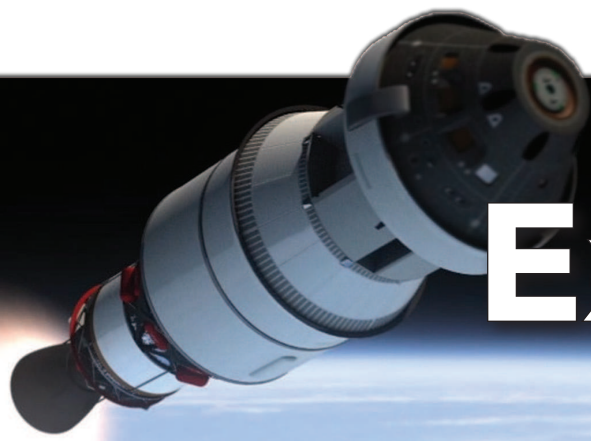
Use this construction to bisect  $\angle XYZ$ . Name the bisector  $\overrightarrow{YW}$ .



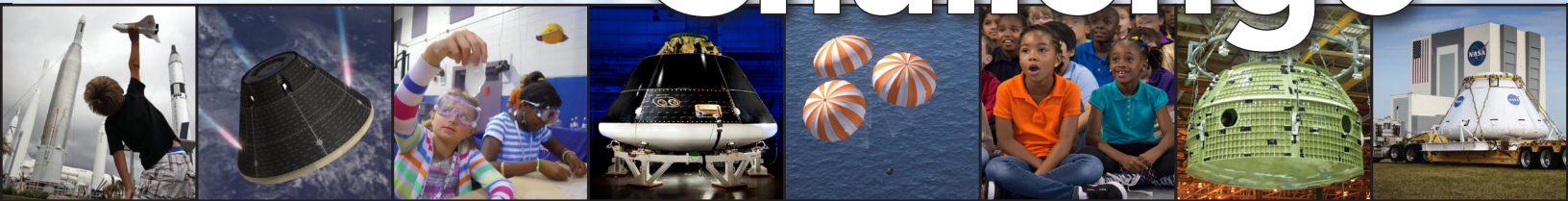
Use constructions L1.4a and L1.4b to construct an angle that measures  $1.5(m\angle SMC)$ . Name the new angle  $\angle GEO$ .



DO NOT erase compass markings or other “incidental” marks.



# Exploration Design Challenge



**NASA's Exploration Design Challenge** is an example of an educational experience aligned with the Next Generation Science Standards. The challenge provides today's students and tomorrow's workforce an opportunity to play a unique role in the future of human spaceflight. NASA and Lockheed Martin are developing the Orion spacecraft to carry astronauts beyond low Earth orbit and on to an asteroid or Mars. Protecting astronauts from space radiation on these distant travels is an important – and very real – problem that needs solving. NASA is looking for students to help!

Using free, standards-based activities and multimedia resources developed by leading education experts, students will learn about space radiation and human spaceflight. Students will then think and act like scientists to analyze different materials that simulate radiation shielding and make recommendations as to what best blocks harmful radiation.

Students in grades 9-12 can take the challenge a step further and think and act like engineers to design shielding. Students will follow the engineering design process and work in teams to design radiation shielding to protect a sensor on the Orion crew module from

space radiation. Once designs are complete, teams may compete for the chance to build their designs and have it flown on the Orion Exploration Flight Test-1 Mission.

All students and educators participating in the challenge will have their name flown on the Exploration Flight Test-1 Mission as members of the virtual crew. This unmanned mission is set to launch from Florida's Cape Canaveral Air Force Station in late 2014. The deadline to register for the virtual crew is March 14, 2014.

The challenge officially launched on March 11, 2013, and thousands of students across the globe have registered to take part. Help NASA protect our astronauts as they venture to places never before attempted by human beings.

Chart your journey to  
deep space by joining  
NASA's Exploration  
Design Challenge at  
[http://www.nasa.gov/  
education/edc](http://www.nasa.gov/education/edc).

**For more information, visit [www.nasa.gov/education/edc](http://www.nasa.gov/education/edc)**



# Montrose School District #43-2

309 South Church Avenue  
Montrose, SD 57048

Phone (605) 363-5025 Fax (605) 363-3513



Dean Kueter, Superintendent/Elementary Principal  
Lonny Johnson, 7-12 Principal/Activities Director

Cindy Christensen, Business Manager  
Robin Jarrett, Guidance Counselor

Jan. 29, 2013

Applebee's Services, Inc.  
8140 Ward Parkway  
Kansas City, MO 64114

Dear Sirs:

I have been a satisfied customer at Applebee's for many years. I particularly enjoy your "Pick 'n Pair" menu options where a customer chooses two items from a given assortment of five soups, four salads, and five entrées. However, as a mathematics teacher, I have some concerns with your calculations. On a recent visit to Applebee's in Brookings SD, I ordered from the menu below.



The menu states that there are 75 ways to "reclaim your lunch." I believe that there has been a mathematical error in this calculation. According to the Fundamental Counting Principle:

*"Suppose one event can be chosen in  $p$  different ways, and another independent even can be chosen in  $q$  different ways. Then the two events can be chosen successively in  $p$  times  $q$  ways."*

Let's label the five soup options as A, B, C, D, and E. Designate the four salads as F, G, H, and I. The five entrées are J, K, L, M, and N.

Choosing one soup and one salad would present the following 20 possibilities (5 soups times 4 salads): AF, AG, AH, AI, BF, BG, BH, BI, CF, CG, CH, CI, DF, DG, DH, DI, EF, EG, EH, EI.

A customer selecting one soup and one entrée chooses from the following 25 possibilities (5 soups times 5 entrées): AJ, AK, AL, AM, AN, BJ, BK, BL, BM, BN, CJ, CK, CL, CM, CN, DJ, DK, DL, DM, DN, EJ, EK, EL, EM, EN.

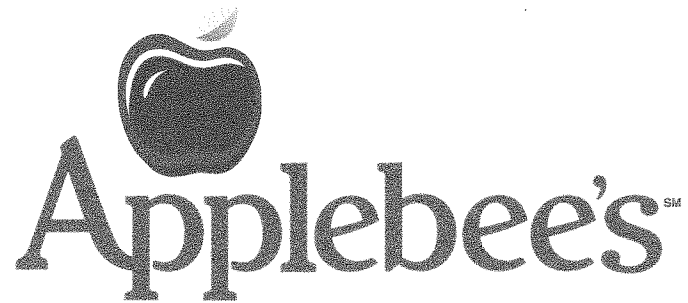
Finally, choosing one salad and one entrée presents the following 20 possibilities (4 salads x 5 entrées): FJ, FK, FL, FM, FN, GJ, GK, GL, GM, GN, HJ, HK, HL, HM, HN, IJ, IK, IL, IM, IN.

As you can see, the total number of possible orders is  $20 + 25 + 20$  which is 65, not 75 as listed on the menu. Just thought you'd want to know.

Sincerely,

Cindy Kroon  
Mathematics Instructor

*Home of the Irish*



February 5, 2013

Cindy Kroon  
309 S Church Ave  
Montrose, SD 57048-2029

Dear Cindy,

Thank you for your e-mail. We're always looking for new ways to provide great guest service, and comments like yours help us to do that. We've forwarded your comments to our Finance and Menu Development team regarding the current 75 possible combinations that's listed on the back of the menu. We appreciate your concern and we want to make sure that your voice is heard. Thanks again.

If you have any other questions or comments, please give us a call at 888-592-7753.

Sincerely,

Guest Relations Specialist  
Case # 1502844



# LEARNING & THINKING INSTITUTES



South Dakota's Learning and Thinking Institutes bring new life and vigor to classrooms where both teachers and students may have been feeling more than a bit weary and overtaxed by evolving educational initiatives and programs. ***If it's time for you to take charge of the change in your teaching life, consider this opportunity.***

During the upcoming school year, Technology and Innovation in Education (TIE), in partnership with the National Math and Science Initiative (NMSI) and the South Dakota Department of Education (SD DOE) will offer regional English Language Arts (ELA) and math Learning and Thinking Institutes. These institutes will immerse middle school and high school instructors in hands-on strategies designed to impact student learning. The institutes will help teachers hone the skills they need to better prepare students for the challenges of coursework and learning situations that require critical thinking skills.

Participants will receive access to online guides packed with lessons and strategies aligned to the Common Core State Standards and designed to enhance classroom instruction. Materials have been developed by NMSI's Teacher Training Program (formerly Laying the Foundation).

## Training Benefits for Middle School or High School ELA and Math Instructors:

- Focused on meeting the specific content needs of ELA and math instructors
- Features hands-on, engaging but challenging learning activities
- Packed with classroom-ready tools that align with Common Core State Standards
- Filled with content tips and teaching techniques that encourage critical thinking among students
- Focused on lessons and strategies that encourage students to hone their higher-level thinking skills
- Access to materials and resources available online only to institute participants
- Opportunity for letter-graded graduate credits (at participant's expense)

Teachers who have participated in past institutes have found that their teaching lives have been reinvigorated and their students' learning experiences have been transformed by the introduction of lessons that are innovative, challenging and filled with learning!

## South Dakota educators share their reactions to the teacher training:

*"I have taken into consideration the ideas that we talked about during this training as far as deeper and more in-depth questions. I find myself asking better questions and expecting more from student responses as proof that they are truly understanding the material."* **SD Math Instructor**

*"The institute has challenged me to think of how I present material and has caused me to try to present in different and additional ways for better student understanding--and hopefully achievement."* **SD Math Instructor**

*"I have found this training to be the most beneficial class I've taken—mostly because of the lessons I've walked away with, discussions we've had and information education system updates that I probably otherwise would not have paid attention to. I have learned so much. I love branching out now and trying new things."* **ELA Instructor**

*"This training has made me sit down and really think about the effectiveness of my lessons. I am in a slightly overwhelming situation teaching seven different preps and feeling as if I am flying by the seat of my pants most of the time. The training has helped tremendously with the strategies that give us more bang for our bucks! I am very excited to have them as a guide as we move on to the new Common Core Standards."* **ELA Instructor**

*"The learning strategies we reviewed are so easily adaptable to all grade levels and all ability levels that I'd really have to be stubborn not to incorporate them into my classroom...Because of this experience, I feel so much more open to other ideas. I'm not afraid to change the content of my class or the approach I'm taking. In fact, I want to change it! I want to try new things."* **ELA Instructor**

### **ELA Institute: Grades 6-12, June Preszler, NMSI Certified Trainer**

Sessions 1 and 2, Friday and Saturday, Sept. 20 and 21, TIE, Rapid City, SD

Sessions 1 and 2, Friday and Saturday, Sept. 27-28, TBD, Sioux Falls, SD

Sessions 3 and 4, Friday and Saturday, Feb. 21-22, TIE, Rapid City, SD

Sessions 3 and 4, Friday and Saturday, Feb. 28-March 1, TBD, Sioux Falls, SD

### **Math Institute: Grades 6-12, Marcia Torgrude, NMSI Certified Trainer**

Sessions 1 and 2, Friday and Saturday, Sept. 27 and 28, TIE, Rapid City, SD

Sessions 1 and 2, Friday and Saturday, Oct. 4 and 5, TBD, Sioux Falls, SD

Sessions 3 and 4, Friday and Saturday, Feb. 28 and March 1, TIE, Rapid City, SD

Sessions 3 and 4, Friday and Saturday, March 7 and 8, TBD, Sioux Falls, SD

### **Times:**

8:30 to 3:30 on Friday

8:30 to 2:30 on Saturday

**Institute Costs:** Through funding available from TIE, NMSI and SDDOE, we are able to offer these Institutes as a subsidized experience. The shared-cost per participant will be \$200 (\$50 per session). The full cost of the Institute is \$600 per participant so \$400 per participant will be covered by partners. ***Please note that unless other funding becomes available, this is the only year the institutes will be offered at a shared-cost.***

**Contact:** June Preszler, [jpreszler@tie.net](mailto:jpreszler@tie.net), (605) 721-4586

Graduate credit will be available. 30 spaces available on a first-come, first-serve basis.

**Register: [www.bit.ly/SDtli](http://www.bit.ly/SDtli)**



**Technology & Innovation  
in Education**  
*learning is our work*

# Thinking and Learning NMSI Math Modules

## Module 1: Areas and Volumes

Teachers examine how concepts involving areas and volumes progress from sixth grade to calculus. Training begins with manipulative-rich student lessons that explore the surface area and volume of three-dimensional solids. As the lessons progress through the vertical strand, participants will come to realize the necessity of teaching both area and volume on the coordinate plane. They work selected questions from and discuss teaching strategies for model lessons for middle grades in which students plot coordinate points to create planar figures, calculate the areas of those figures, revolve the figures about a horizontal or vertical line to create three dimensional solids, and calculate the volumes of those solids. In addition, they will work through and discuss lessons from Algebra 1 and Geometry or Math 1 and Math 2 in which students begin by graphing linear equations to create these models.

## Module 2: Rate of Change--Average and Instantaneous

Teachers examine how concepts involving rate of change progress from sixth grade to calculus. Training begins with a manipulative-rich lesson that leads students to interpret pi as a constant rate of change. As the lessons progress through the vertical strand, participants connect slope and rate of change. They work selected questions from and discuss teaching strategies for model lessons for middle grades in which students interpret speed as a rate of change, calculate average rates of change over specific intervals, and examine graphs to conclude that average rate of change is not the same as instantaneous rate of change. In addition, teachers work through and discuss lessons from Algebra 1 and Geometry or Math 1 and Math 2 in which students apply a difference quotient to calculate average rate of change and are introduced to approximating an instantaneous rate of change from a graph.

## Module 3: Graphical Displays and Distributions

Middle school teachers examine how concepts involving graphical displays and distributions progress from sixth grade to statistics. Participants examine classroom ready middle grades lessons which require students to construct, compare, analyze, and interpret box-and-whisker plots, line plots (dot plots), histograms, and stem-and leaf plots. Each lesson involves creating, by hand or with a graphing calculator, appropriate graphical displays based on real-world data. Graphs are analyzed by investigating measures of central tendency, variability, and shape. In addition, teachers work through and discuss a lesson for Geometry or Math 2 in which students observe variability in data collected using measurement. Algebra 1 or Math 1 lessons connecting transformations to graphical displays and introducing standard deviation as a measure of variability are also explored in the training.

## Module 4: Analysis of Functions--Piecewise Graphs

Middle school teachers examine how concepts involving analysis of functions progress from sixth grade to calculus. Training begins with a strategy for teaching students the difference between the path of a person's walk and a distance-time graph of the walk. Participants work through and discuss teaching strategies for classroom-ready middle grades lessons and assessments in which students interpret distance-time and rate-time graphs. In addition, they discuss selected questions from Algebra 1 and Geometry or Math 1 and Math 2 lessons on graphing and defining piecewise functions.

**Registration information is included here. However, please see attached flyer for additional institute details and descriptions.**

**Register:** [www.bit.ly/SDtli](http://www.bit.ly/SDtli)

**Math Institute: Grades 6-12, Marcia Torgrude, NMSI Certified Trainer - Times: Friday-8:30-3:30 and Saturday 8:30-2:30**

~~Sessions 1 and 2, Friday and Saturday, Sept. 27 and 28, TIE, Rapid City, SD~~

~~Sessions 1 and 2, Friday and Saturday, Oct. 4 and 5, TBD, Sioux Falls, SD~~

Sessions 3 and 4, Friday and Saturday, Feb. 28 and March 1, TIE, Rapid City, SD

Sessions 3 and 4, Friday and Saturday, March 7 and 8, TBD, Sioux Falls, SD

**Institute Costs:** Through funding available from TIE, NMSI and the South Dakota Department of Education, we are able to offer these Institutes as a subsidized experience. The cost per participant will be \$200 (\$50 per session). Although the full cost of the Institute is \$600 per participant, partner organizations will be covering \$400 per participant.

## 2014 Daktronics Outstanding Mathematics Teacher Award

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Daktronics, in conjunction with the South Dakota Council of Teachers of Mathematics, is pleased to sponsor the Daktronics Outstanding Mathematics Teacher Award in the state of South Dakota. The recipient of this award receives a plaque and a \$1000 cash award to support the award winner's efforts to teach mathematics with equipment or perhaps help to attend a conference or workshop. Middle school and high school teachers, who spend at least 50 percent of their schedule teaching mathematics, are eligible for this award. Application information is available at <http://www.sdctm.org/>

### AWARD SUBMISSION REQUIREMENTS

- 1.) A maximum two page, 12 font resume, which includes the following:
  - a) Personal information, including name, telephone numbers, email, addresses, etc.
  - b) Beginning with the most recent, list colleges and universities attended including post-graduate studies. Indicate degrees earned and dates of attendance.
  - c) Beginning with the most recent, list teaching employment history indicating time period, grade level and subject area.
  - d) Beginning with the most recent, list professional association memberships including information regarding offices held and other relevant activities.
  - e) Beginning with the most recent, list staff development leadership activities or other professional activities.
  - f) Beginning with the most recent, list awards and other recognition of your teaching.
- 2.) A maximum two page, 12 font, double spaced, personal essay that includes but is not limited to the following topics: 1.) Describe how you have inspired students in your mathematics class. 2.) Describe innovative teaching techniques involved in your classes 3.) Describe what types of technology are used in your class. 4.) Describe any professional development, as it pertains to mathematics, you have been involved in. 5.) Describe how you have helped students attend classes/workshops/contests/quiz bowls that pertain to mathematics or engineering or how you have helped students incorporate mathematics outside the classroom. (For example, MathCounts, math club, etc.)
- 3.) Provide 4 letters of recommendation one each from an administrator, parent, colleague, and student or former student. Recommendations must be dated and contain contact information for the writer. They are limited to one page, double spaced, one inch margins, and must be in 12 font. It is important that the information be as detailed as possible to adequately evaluate each application/nomination.
- 4.) The completed resume and recommendations need to be included in one file in either a word or PDF file in the order they are outlined above and emailed to Paul Kuhlman at [paul.kuhlman@k12.sd.us](mailto:paul.kuhlman@k12.sd.us).

The packet must be received by **December 1<sup>st</sup>, 2013**

- 5.) The recipient for the 2014 Daktronics Outstanding Mathematics Teacher Award will be announced at the **2014 SDCTM/SDSTA Joint Professional Development Conference in Huron SD.**

# 2014 SDCTM/SDSTA JOINT CONFERENCE

Conference information and program booklets will be available online at [www.sdctm.org](http://www.sdctm.org) and [www.sdsta.org](http://www.sdsta.org)

## ADVANCE REGISTRATION

Crossroads Events Center, Huron South Dakota  
February 6-8, 2014 1-800-876-5858

*Please print clearly. Postmark by January 20, 2014. After this date, please register on-site.*

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
School/District \_\_\_\_\_ E-mail \_\_\_\_\_  
Home phone \_\_\_\_\_ School Phone \_\_\_\_\_

*Please check the appropriate categories for membership, conference registration, and payment.*

### 1. SDCTM/SDSTA MEMBERSHIP(s) and DUES

*Please check the appropriate categories. You may join one, both, or neither organization.*

**Begin/renew SDCTM (math) for one year**

- Elementary \$5
- Middle School \$20
- High School \$20
- Post-Secondary \$20
- Student \$5
- Retired \$5
- Other \$20

**Begin/renew SDSTA (science) for one year**

- \_\_\_\_\_ Elementary \$5
- \_\_\_\_\_ Middle School \$20
- \_\_\_\_\_ High School \$20
- \_\_\_\_\_ Post-Secondary \$20
- \_\_\_\_\_ Student \$5
- \_\_\_\_\_ Retired \$5
- \_\_\_\_\_ Other \$20

### 2. CONFERENCE REGISTRATION

*Please check the appropriate categories. Noon luncheon is included for each day that you register.*

**NOTE: The Friday night banquet is NOT included. Banquet tickets may be purchased for \$25 each.**

I will attend the conference on (check one): \_\_\_\_\_ Friday \_\_\_\_\_ Saturday \_\_\_\_\_ Both days

**SDCTM or SDSTA Member**

\_\_\_\_\_ One day \$50  
\_\_\_\_\_ Two days \$75

**Non-Member**

One day \$100  
 Two days \$125

**Student Member**

One day \$15  
 Two days \$25

**College credit will be available; information/registration will be available at the conference registration table.**

### 3. PAYMENT

*Make checks payable to SDCTM.  
Purchase orders will NOT be accepted.*

Membership(s) total \$ \_\_\_\_\_  
Registration \$ \_\_\_\_\_  
Friday Night Banquet (\$25 each) \$ \_\_\_\_\_

**TOTAL ENCLOSED \$ \_\_\_\_\_**

*Requests for refunds must be received by January 20, 2014*

### 4. SEND THIS FORM WITH PAYMENT

**Steve Caron**  
907 South 16<sup>th</sup> Street School phone (605) 725-8208  
Aberdeen, SD 57401 Home phone (605) 226-2292

Email: [steve.caron@k12.sd.us](mailto:steve.caron@k12.sd.us)

*Advance registration must be postmarked by January 20, 2014.  
After this date, please register on-site.*

Please check here if you have also submitted a speaker proposal form for the 2014 Conference.



**“GOEHRING/VEITZ LEADERSHIP SCHOLARSHIP”**

“The Goehring/Veitz Leadership Scholarship” has been established to encourage new teachers of math and science to become professionally involved on the state level. The scholarship, which is good for a free one or two day registration at the Joint Conference of the South Dakota Council of Teachers of Mathematics and the South Dakota Science Teachers Association, is available to any teacher who meets each of the following criteria:

- Is a K-12 teacher of math or science who is in the first year of teaching in SD
- Is a member of SDCTM and/or SDSTA Applicants must pay their own dues to the chosen organization.

The application process is simple. Fill out the form below, have it signed by the building principal, and mail it to Steve Caron along with the regular conference registration form which is available at [www.sdctm.org](http://www.sdctm.org).

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**APPLICATION**  
**“GOEHRING/VEITZ LEADERSHIP SCHOLARSHIP”**

Name:

School District:

Teaching Assignment:

Membership Information:

I am already a member of SDCTM SDSTA (Circle one or both)

I am joining SDCTM and/or SDSTA (Circle one or both)

I am enclosing a check for

\$5.00 for Elementary Math and/or \$5.00 for Elementary Science

\$20.00 for MS/HS Math and/or \$20.00 for MS/HS Science

<p>(Name) _____ is in his/her first year of teaching in SD at _____ School District during the _____ school year and is thus eligible for ‘The Goehring/Veitz Leadership Scholarship.’</p> <p>Signed: _____, Building Principal</p>
---



Print a copy of this form. Mail with check payable to SDCTM to:

**Diana McCann**  
**31133 Bon Homme Road**  
**Tabor, SD 57063**

Name \_\_\_\_\_

School Name \_\_\_\_\_

Subjects or Grades Taught \_\_\_\_\_

Addresses

Home \_\_\_\_\_

\_\_\_\_\_

School \_\_\_\_\_

\_\_\_\_\_

Mailing Address: \_\_\_\_\_ Home \_\_\_\_\_ School

Home Phone \_\_\_\_\_

School Phone \_\_\_\_\_

Fax Number \_\_\_\_\_

E-mail \_\_\_\_\_

Membership categories (Check only one)

- \_\_\_\_\_ Elementary School \$5.00
- \_\_\_\_\_ Middle School / Junior High \$20.00
- \_\_\_\_\_ High School \$20.00
- \_\_\_\_\_ Post Secondary \$20.00
- \_\_\_\_\_ Retired \$5.00
- \_\_\_\_\_ Student \$5.00
- \_\_\_\_\_ Other \$20.00



SDCTM Newsletter  
C/o Sheila McQuade  
OGHS  
3201 S. Kiwanis Ave  
Sioux Falls, SD 57105

## 2013-2015 SDCTM Executive Board Members

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Ellie Cooch  
Spearfish Middle School  
ecooch@spearfish.k12.sd.us

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jay.berglund@k12.sd.us

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cindy.kroon@k12.sd.us

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smcquade2@sfcss.org



[www.sdctm.org](http://www.sdctm.org)