Teaching and Learning Mathematics: More Than Just Standards, More Than Just Curriculum

A Saturday Series for K-12 Mathematics Educators

Over the past twenty-five years, we have learned that standards and curriculum alone will not realize the goal of high levels of mathematical understanding by all students. More is needed. Throughout the 2015-2016 Saturday Series we will explore some of the big issues related to the teaching and learning of mathematics as we continue to showcase a variety of research based strategies and techniques and discuss specific grade level/grade span issues and concerns. These sessions will be filled with ideas for engaging students in learning mathematics. Each session will also provide collaboration time to allow teachers to examine instructional resources and to explore and develop activities which support student learning.

Over the course of the 5 Saturdays, teachers will:

• Examine research on teaching and learning math, including the role of mindset
• Discuss the Math Teaching Practices and Guiding Principles from Principles to Action
• Investigate strategies and activities designed to promote sense-making, flexibility, and mathematical reasoning
• Explore the use of manipulatives, tools, and technology
• Examine the role that assessment plays in an effective math program

We will again be breaking into 3 different grade level spans for the sessions. K-2 teachers will meet as a group for the entire day; 3rd-7th grade teachers will meet together in the morning, and then break into a 3rd-5th grade session and a 6th-7th grade session in the afternoon; and 8th-12th grade teachers will meet as a group for the entire day.

**September 19, 2015**

*Principles to Actions: Ensuring Mathematical Success for All Students* sets forth a set of strongly recommended, research-informed actions designed to ensure that all students learn mathematics at high levels. Participants in all groups will be introduced to the principles and practices outlined in this book, examining and discussing their connection to the standards and to effective classroom instruction. Each group will also focus on the role mindset plays in the learning of mathematics, including strategies and activities designed to support and develop a growth mindset in students.

**Grades Kindergarten - 7:** In addition, participants in these sessions will explore the use of tasks to engage students and to provide “low floor, high ceiling” entry points that allow students to experience productive struggle. Participants will also explore activities that engage students in the mathematics such as: games, literature, technology, etc.

**Grades 8 - 12:** In addition, participants in this session will examine the use of graphing calculators as a tool for investigating key math concepts. Teachers will experience what it is like to participate in an investigation, then work in collaborative groups to discuss strategies for modifying activities to target specific standards or needs. Teachers will also explore the use of tasks that provide “low floor, high ceiling” entry points to both engage students and allow them to experience productive struggle.
November 7, 2015

**Grades Kindergarten - 7:** Participants will continue to examine the Math Teaching Practices and the importance of developing a growth mindset in the classroom. They will also continue to explore the use of tasks and investigations, as well as a variety of tools. In addition, participants will investigate current research around assessment and praise and review strategies designed to help parents support their child’s mathematical development and learning.

**Grades 8 - 12:** Participants will continue to examine the Math Teaching Practices and the importance of a growth mindset in the classroom. They will also continue to explore the use of tasks, investigations, and technology as a tool, focusing on the use of Desmos. In addition, participants will have opportunities to experience and investigate strategies designed to promote effective mathematical discourse and debate in the classroom.

January 23, 2016

**Grades Kindergarten - 7:** Participants will have opportunities to experience and investigate a variety of resources that support and promote mathematical discourse and debate in the classroom, including the use of Number Talks and mathematical tasks. They will continue to examine the Math Teaching Practices and the importance of developing a growth mindset in the classroom.

**Grades 8 - 12:** Participants will explore the use of Geogebra as a tool for teaching and learning math. They will continue to examine the Math Teaching Practices and the importance of helping students develop a growth mindset, focusing on supporting productive struggle. They will also examine ways to effectively use student thinking to support and extend student learning.

March 12, 2016

**Grades Kindergarten - 7:** Participants will review the progression of strategies and models related to learning different math standards. These progressions will support teachers in helping their students become mathematical attorneys who can make and defend their cases. The progressions will also help teachers promote cross-curricular connections. Participants will also continue their examination of the Math Teaching Practices as well as the importance of developing a growth mindset in the classroom.

**Grades 8 - 12:** There is an abundance of online technology and resources that can be used to support the teaching and learning of mathematics. Participants will have an opportunity to examine and explore a variety of resources, evaluating their effectiveness. They will be able to collaborate with other teachers to design lessons and activities that use technology as a means on engaging students and enhancing students’ learning and understanding of key math concepts. Teachers will also explore the use of multiple representations to deepen students’ understanding and support students in making connections between key mathematical concepts and ideas.
Grades Kindergarten - 7: Participants will have the opportunity to think back over their school year and reflect on what went well and what changes they would make. As part of this reflection, they will reflect on the Math Teaching Practices and the opportunities they have had to support students in developing a positive attitude and a growth mindset toward learning mathematics. We will use this reflection process as a model for teachers to use as they support students in reflecting on their learning.

Grades 8 - 12: Spreadsheets are a common tool used in the real work. Participants will explore and examine the use of Xcel as a tool for teaching and learning math. They will continue to examine the Math Teaching Practices, mindset, tasks, investigations, and explorations. In addition, teachers will examine the role of assessment, including formal and informal assessments, formative and summative assessments, the use of rubrics, and the role of assessments in understanding what students know.

Times: 8:30AM – 4:00PM (lunch & light snacks will be provided)
Location: Mathematical Sciences Building, University of California, Davis

Registration cost per Saturday:
- Early discounted sale registration: $45
- Regular registration: $65
- Late registration: $75

Credit: Costs of optional units are as follow: $115 for 2.0 CEUs, and $130 for 3.0 CEUs.
To be eligible for the CEUs, participant must attend the entire session, sign in and sign out, and actively participate throughout the workshops.
- 2.0 CEUs optional credit will be available for purchase by teachers who attend at least 3 of the sessions offered.
- 3.0 CEUs optional credit will be available for purchase by teachers who attend all 5 sessions offered.

Registration in advance is required. Participation certificates will be available only for pre-registrants who stay the entire session.

Space is limited, so register early to ensure a spot.

HOW TO REGISTER:

Payment by credit card:
- Enroll online at https://marketplace.ucdavis.edu/C21642_ustores/web/store_main.jsp?STOREID=7&SINGLESTORE=true

Payment by check or by PO:
- Enroll by paper form.

These workshops are designed to meet the specific needs of educators. We respectfully request that you do not bring children, babies, or pets to the sessions.
Registration form for UCDMP Saturday Series #1
September 19, 2015

Complete registration and payment by September 12, 2015 to save on registration fees.

First name: ___________________________ M.I.: ___________________________ Last name: ___________________________

Address: __________________________________________________________

City/Town: ___________________________ , CA  Zip Code: ___________________________

Primary email: ___________________________ Alternate email: ___________________________

Home phone: ___________________________ Work phone: ___________________________

School: ___________________________ District: ___________________________

All grades you have taught: ___________________________ Grades you currently teach: ___________________________

Grade group selection for this workshop: □ Grades K-2  □ Grades 3-5  □ Grades 6-7  □ Grades 8-12

Enrollment:  ✔ Enroll online at http://mathproject.ucdavis.edu and pay by credit card, or

✔ Scan completed paper registration form with approved purchase order and email to
Thu Pham at tjpham@ucdavis.edu, or

✔ Mail or hand-deliver completed application and check payment to the following address. Make check payable to “The Regents of UC.” Please allow up to 10 days for USPS mail to reach our department.
Packet must be RECEIVED by 12:00PM on September 12th to qualify for the early discounted sale price of $45.

Attention: Thu Pham
Department of Mathematics
University of California, Davis
One Shields Avenue
Davis, CA  95616

Registration and Cancellation Policy: I understand that upon submission of this registration, I am responsible for the full registration fee payment -- Discounted sale price of $45 due at UCDMP before 12:00Noon on September 12th; Regular price of $65 after 12:00Noon of September 12th; Late price of $75 if payment or approved PO is not received by 12:00Noon on Thursday, September 17th. Cancellations must be received in writing by email by 12:00Noon on September 12, 2015 and are subject to a $15 cancellation fee. After that date, substitutions are allowed but no refunds will be made. If substitutions are being made, please notify our office by Wednesday, September 16th so that we may order a new PD certificate for your substitute. Unpaid no-shows or late cancellations will be billed the full late registration amount. To cancel, please email Thu Pham at tjpham@ucdavis.edu.

All payments (registration or cancellation) or PO must be received by September 17th to avoid a $10 late payment fee.

Payment enclosed:  □ Purchase Order # ___________________________  □ Check # ___________________________

Registrant signature (required) ___________________________ date ___________________________

Content questions? Contact Pam Hutchison (pam.ucdmp@gmail.com), or Diana Zaragoza (dazaragoza@ucdavis.edu).
Registration questions? Call Thu Pham at (530) 752-8467 or email tjpham@ucdavis.edu.

Additional flyers and registration forms may be downloaded from our web-site, http://mathproject.ucdavis.edu
Feel free to share program information with your colleagues.
Registration form for UCDMP Saturday Series #2
November 7, 2015

Complete registration and payment by October 24, 2015 to save on registration fees.

First name: ___________________________ M.I.: ___________________________ Last name: ___________________________

Address: ______________________________

City/Town: ___________________________ CA  Zip Code ___________________________

Primary email: ___________________________ Alternate email: ___________________________

Home phone: ___________________________ Work phone: ___________________________

School: ___________________________ District: ___________________________

All grades you have taught: ___________________________ Grades you currently teach: ___________________________

Grade group selection for this workshop: ☐ Grades K-2   ☐ Grades 3-5   ☐ Grades 6-7   ☐ Grades 8-12

Enrollment: ✓ Enroll online at http://mathproject.ucdavis.edu and pay by credit card, or  
✓ Scan completed paper registration form with approved purchase order and email to Thu Pham at tjpham@ucdavis.edu, or  
✓ Mail or hand-deliver completed application and check payment to the following address. Make check payable to “The Regents of UC.” Please allow up to 10 days for USPS mail to reach our department. Packet must be RECEIVED by 12:00PM on October 24th to qualify for the early discounted sale price of $45.

Attention: Thu Pham  
Department of Mathematics  
University of California, Davis  
One Shields Avenue  
Davis, CA  95616

Registration and Cancellation Policy: I understand that upon submission of this registration, I am responsible for the full registration fee payment -- Discounted sale price of $45 due at UCDMP before 12:00Noon on October 24th; Regular price of $65 after 12:00Noon of October 24th; Late price of $75 if payment or approved PO is not received by 12:00Noon on Thursday, November 5th. Cancellations must be received in writing by email by 12:00Noon on October 24, 2015 and are subject to a $15 cancellation fee. After that date, substitutions are allowed but no refunds will be made. If substitutions are being made, please notify our office by Wednesday, November 4th so that we may order a new PD certificate for your substitute. Unpaid no-shows or late cancellations will be billed the full late registration amount. To cancel, please email Thu Pham at tjpham@ucdavis.edu.

All payments (registration or cancellation) or PO must be received by November 5th to avoid a $10 late payment fee.

Payment enclosed:  ☐ Purchase Order # ___________________________  ☐ Check # ___________________________

Registrant signature (required) ___________________________ date ___________________________

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Registration questions? Call Thu Pham at (530) 752-8467 or email tjpham@ucdavis.edu.

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Feel free to share program information with your colleagues.
Registration form for UCDMP Saturday Series #3  
January 23, 2016

Complete registration and payment by January 9, 2016 to save on registration fees.

First name: ___________________________ M.I.: ___________________________ Last name: ___________________________

Address: __________________________

City/Town: __________________________ , CA  Zip Code __________________________

Primary email: ___________________________ Alternate email: __________________________

Home phone: ___________________________ Work phone: __________________________

School: ___________________________ District: __________________________

All grades you have taught: ___________________________ Grades you currently teach: __________________________

Grade group selection for this workshop: □ Grades K-2    □ Grades 3-5    □ Grades 6-7    □ Grades 8-12

Enrollment: ✓ Enroll online at http://mathproject.ucdavis.edu and pay by credit card, or

✓ Scan completed paper registration form with approved purchase order and email to
Thu Pham at tjpham@ucdavis.edu, or

✓ Mail or hand-deliver completed application and check payment to the following address. Make check payable to “The Regents of UC.” Please allow up to 10 days for USPS mail to reach our department. Packet must be RECEIVED by 12:00PM on January 9th to qualify for the early discounted sale price of $45.

Attention: Thu Pham
Department of Mathematics
University of California, Davis
One Shields Avenue
Davis, CA  95616

Registration and Cancellation Policy: I understand that upon submission of this registration, I am responsible for the full registration fee payment -- Discounted sale price of $45 due at UCDMP before 12:00Noon on January 9th; Regular price of $65 after 12:00Noon of January 9th; Late price of $75 if payment or approved PO is not received by 12:00Noon on Thursday, January 21st. Cancellations must be received in writing by email by 12:00Noon on January 9, 2016 and are subject to a $15 cancellation fee. After that date, substitutions are allowed but no refunds will be made. If substitutions are being made, please notify our office by Wednesday, January 20th so that we may order a new PD certificate for your substitute. Unpaid no-shows or late cancellations will be billed the full late registration amount. To cancel, please email Thu Pham at tjpham@ucdavis.edu.

All payments (registration or cancellation) or PO must be received by January 21th to avoid a $10 late payment fee.

Payment enclosed: □ Purchase Order # ___________________________ □ Check # __________________________

Registrant signature (required) ___________________________ date __________________________

Content questions? Contact Pam Hutchison (pam.ucdmp@gmail.com), or Diana Zaragoza (dazaragoza@ucdavis.edu). Registration questions? Call Thu Pham at (530) 752-8467 or email tjpham@ucdavis.edu.

Additional flyers and registration forms may be downloaded from our web-site, http://mathproject.ucdavis.edu
Feel free to share program information with your colleagues.
Registration form for UCDMP Saturday Series #4
March 12, 2016

Complete registration and payment by February 27, 2016 to save on registration fees.

First name: ___________________________ M.I.: ______________________ Last name: ___________________________
Address: ____________________________________________________________________________________
City/Town: ____________________________ CA Zip Code __________________________
Primary email: __________________________ Alternate email: __________________________
Home phone: __________________________ Work phone: __________________________
School: __________________________ District: __________________________
All grades you have taught: __________________________ Grades you currently teach: __________________________
Grade group selection for this workshop: ☐ Grades K-2 ☐ Grades 3-5 ☐ Grades 6-7 ☐ Grades 8-12

Enrollment:  ✔ Enroll online at http://mathproject.ucdavis.edu and pay by credit card, or
  ✔ Scan completed paper registration form with approved purchase order and email to
    Thu Pham at tjpham@ucdavis.edu, or
  ✔ Mail or hand-deliver completed application and check payment to the following address. Make check payable to “The Regents of UC.” Please allow up to 10 days for USPS mail to reach our department.
Packet must be RECEIVED by 12:00PM on February 27th to qualify for the early discounted sale price of $45.

Attention: Thu Pham
Department of Mathematics
University of California, Davis
One Shields Avenue
Davis, CA  95616

Registration and Cancellation Policy: I understand that upon submission of this registration, I am responsible for the full registration fee payment -- Discounted sale price of $45 due at UCDMP before 12:00Noon on February 27th; Regular price of $65 after 12:00Noon of February 27th; Late price of $75 if payment or approved PO is not received by 12:00Noon on Thursday, March 10th. Cancellations must be received in writing by email by 12:00Noon on February 27, 2016 and are subject to a $15 cancellation fee. After that date, substitutions are allowed but no refunds will be made. If substitutions are being made, please notify our office by Wednesday, March 9th so that we may order a new PD certificate for your substitute. Unpaid no-shows or late cancellations will be billed the full late registration amount. To cancel, please email Thu Pham at tjpham@ucdavis.edu.

All payments (registration or cancellation) or PO must be received by March 10th to avoid a $10 late payment fee.

Payment enclosed: ☐ Purchase Order # __________________________ ☐ Check # __________________________

Registrant signature (required) __________________________ date __________________________

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Registration questions? Call Thu Pham at (530) 752-8467 or email tjpham@ucdavis.edu.

Additional flyers and registration forms may be downloaded from our web-site, http://mathproject.ucdavis.edu
Feel free to share program information with your colleagues.
Registration form for UCDMP Saturday Series #5
May 7, 2016

Complete registration and payment by April 23, 2016 to save on registration fees.

First name: __________________________ M.I.: __________________________ Last name: __________________________
Address: ______________________________ ______________________________ ______________________________
City/Town: ___________________________, CA Zip Code __________________________
Primary email: __________________________ Alternate email: __________________________
Home phone: __________________________ Work phone: __________________________
School: __________________________ District: __________________________
All grades you have taught: __________________________ Grades you currently teach: __________________________

Grade group selection for this workshop: [ ] Grades K-2 [ ] Grades 3-5 [ ] Grades 6-7 [ ] Grades 8-12

Enrollment: [✓] Enroll online at http://mathproject.ucdavis.edu and pay by credit card, or
[✓] Scan completed paper registration form with approved purchase order and email to
Thu Pham at tjpham@ucdavis.edu, or
[✓] Mail or hand-deliver completed application and check payment to the following address. Make check payable to “The Regents of UC.” Please allow up to 10 days for USPS mail to reach our department.
Packet must be RECEIVED by 12:00PM on April 23rd to qualify for the early discounted sale price of $45.

Attention: Thu Pham
Department of Mathematics
University of California, Davis
One Shields Avenue
Davis, CA 95616

Registration and Cancellation Policy: I understand that upon submission of this registration, I am responsible for the full registration fee payment -- Discounted sale price of $45 due at UCDMP before 12:00Noon on April 23rd; Regular price of $65 after 12:00Noon of April 23rd; Late price of $75 if payment or approved PO is not received by 12:00Noon on Thursday, May 5th. Cancellations must be received in writing by email by 12:00Noon on April 23, 2016 and are subject to a $15 cancellation fee. After that date, substitutions are allowed but no refunds will be made. If substitutions are being made, please notify our office by Wednesday, May 4th so that we may order a new PD certificate for your substitute. Unpaid no-shows or late cancellations will be billed the full late registration amount. To cancel, please email Thu Pham at tjpham@ucdavis.edu.

All payments (registration or cancellation) or PO must be received by May 5th to avoid a $10 late payment fee.

Payment enclosed: [ ] Purchase Order # __________________________ [ ] Check # __________________________

Registrant signature (required) __________________________ date __________________________

Content questions? Contact Pam Hutchison (pam.ucdmp@gmail.com), or Diana Zaragoza (dazaragoza@ucdavis.edu).
Registration questions? Call Thu Pham at (530) 752-8467 or email tjpham@ucdavis.edu.

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