



# Math314

learn lead share



James S. McDonnell  
Family Foundation



**STEM**pact

 Washington University in St. Louis  
INSTITUTE FOR SCHOOL PARTNERSHIP



# The Institute for School Partnership

*Connect schools · Inspire students · Empower educators*

*A message from the Chancellor,*

At Washington University, we are committed to strengthening St. Louis by investing in our future leaders.

The Institute for School Partnership at WashU has worked toward educational equity in the region's K-12 schools

for 30 years and is dedicated to ensuring all young learners can participate in programs that expand their economic and educational opportunities. We do this by building bridges between our talented and passionate faculty and under-resourced schools to train leaders, invest in teachers, boost science curriculum — and now with the launch of Math314, enhance mathematics programs across the region.

Our Washington University faculty and staff are proud to partner with the local educational community and consider it a privilege and duty to connect our cutting-edge research with the dedicated teachers who can put it into action in the classroom. Together, we're capturing the curiosity and cultivating the potential of a new generation of community leaders who will go on to serve this great city.



Andrew D. Martin  
Chancellor



 Washington University in St. Louis  
INSTITUTE FOR SCHOOL PARTNERSHIP

[schoolpartnership@wustl.edu](mailto:schoolpartnership@wustl.edu) (314) 935-6846

# Math314

Growing positive math mindsets through  
rich, meaningful learning experiences

**Our approach** is on the development of a long-term partnership focused on improving mathematics teaching at scale.

**We offer** professional learning for teachers, coaches and administrators as well as embedded supports to facilitate implementation.

**Embedded supports and systems supports** are key to the Math314 partnership. Throughout the partnership, ISP endeavors to:

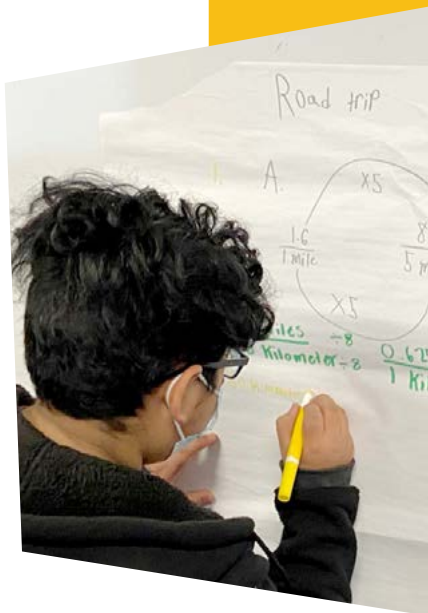
- Support teachers to create learning environments where all students are provided **equitable access** to mathematics.
- Align all math teachers to a **shared vision** of high quality mathematics that is centered around inquiry driven engagement in cognitively demanding tasks.
- Engage every student in opportunities to appreciate the deep and wondrous **connection** between math and the world around them.
- Equip all math teachers with a robust toolkit of **instructional strategies** to productively engage all students in rich mathematics



learn • lead • share

# We believe these things

- Designing **equitable math environments** creates opportunity for all students to learn and grow.
- **Inquiry and risk-taking** should drive the learning of new content in the math classroom.
- Math classrooms should foster a **growth mindset, encourage discourse, and value mistakes.**
- **Talk is essential** to learning.
- Educators can pursue, with equal intensity, **conceptual understanding, procedural skills, and fluency.**



“Doing tasks allows students to show what they are capable of, share knowledge, learn other perspectives, and think about math instead of just following steps.”

– Math314 teacher participant

# Math314 Offerings

## Professional Learning

- Examining Our Foundation
- Achieving Equity Series
- Effective Teaching Practices Series
- Playing with Mathematical Ideas

## Embedded Supports

- Learning Labs
- Embedded Coaching Series
- Improvement Coaching
- Looking at Student Work

## System Supports

- Administrator Learning Walks
- Instructional Leadership Series

“I truly appreciate all of the support and learning. Being able to see the shift in my kids thinking and confidence was life changing.”

– Ritenour, 6th Grade Teacher

# Professional Learning

## Examining Our Foundation

### *through Appreciative Inquiry*

Appreciative Inquiry (AI) turns the traditional problem-based approach to growth upside down. This method uses what we know about human behavior to tap into the insight and resourcefulness of the people in an organization.

By discovering what is working in each system, building a common core, developing a vision, and from there forming positive actions – Appreciative Inquiry brings community cohesion and powers transformative change.

**This session begins the process and is recommended for every stakeholder in districts new to Math314.**

“I feel like my experiences in Math 314 have helped understand the big picture in math in our district and how different pieces tie together. For example, our fishbone activity with PDSA cycles and analyzing teacher data helps me truly see where we are at. Then the PD helps me see how those tools can support where we are at and the PDSA cycles with the coaching calls help me see the effectiveness of those changes. I also think math 314 has helped build trust amongst the four schools to where we can start having discourse amongst ourselves about the best ways to support kids in Mehlville.”

*– Mehlville, 6th Grade Teacher*

# Achieving Equity Series

One foundational session:

## Going deep with mathematics

Session One introduces the five equity practices introduced in Aguirre’s book, “The Impact of Identity in K-8 Mathematics Learning and Teaching.”

This introductory session invites teachers to experience deep mathematical thinking through the lens of a student.

Followed by:

## A series of sessions on equitable teaching practices including:

- Leveraging multiple mathematical competencies
- Affirming mathematics learners’ identities
- Challenging spaces of marginality
- Drawing on multiple resources of knowledge
- Integrating 5 practices and drawing connections between the five practices, NCTM effective teaching practices, and NCTM Standards for Mathematical Practice.

“This was literally the best PD I have ever attended. I loved how it married equity and social justice to math. I am walking away with many tools and strategies to use in my special education classroom.

Additionally, I have a renewed confidence in my ability to teach math and cultivate math learners.”

– Pattonville, Elementary Teacher



# Effective Teaching Practices Series

## *Living out NCTM's Eight Effective Teaching Practices*

The focus of this series is research-based practices for increasing student engagement. **At the heart of every session is a blend of content and pedagogy.**

Teachers will solve intriguing problems and explore instructional practices aligned with the following:

- Missouri Learning Standards (DESE-priority standards)
- Eight Effective Teaching Practices (NCTM)
- Standards for Mathematical Practices (NCTM)
- Five Equitable Teaching Practices\*

---

### Series Overview

---

#### **Groundwork** *Sessions 1 & 2*

- Foundations – Equity Practices
- Position Procedural & Conceptual Work

#### **Student Engagement** *Session 3*

- Facilitate Meaningful Discourse

#### **Promoting & Maintaining Discourse** *Sessions 4-7*

- Pose Purposeful Questions
- Use & Connect Mathematical Representations
- Support Productive Struggle
- Elicit and Use Evidence of Student Thinking

#### **Ongoing Personal Learning**

- Tools

\* *The Impact of Identity in K-8 Mathematics Teaching: Rethinking Equity-Based Practices* (2013) by Julia Aguirre, Karen Mayfield-Ingram, and Danny Bernard Martin.



## Playing with Mathematical Ideas

This series is focused on deepening mathematical content knowledge.

The sessions will **align with your schools' curriculum and instructional resources** and will include:

- Unpacking priority standards
- Exploring learning progressions
- Digging deeper into the curriculum resources
- Scaffolds & extensions

“Excellent session! I had so many take aways like presenting higher thinking questions despite if questions are too hard initially. The mind set of provoking thinking is the goal and success will follow”

*- UCity, Early Childhood Teacher*



## Learning Labs

Learning Labs provide teachers an opportunity to plan and observe a classroom experience, followed by reflection and dialogue about high leverage instructional practices.

These shared experiences may include in-person visits, personalized video experiences and/or peer videos. In each case, co-planning and group reflection remain part of the process.

---

### Learning Lab Overview

---

#### Goal and Task Selection

- Coach and teacher communicate
- Teacher will solve problem and anticipate student responses

#### Group Planning

- Coach and teachers complete Anticipation Guide
- Teachers will select focus area and data collection

#### Teaching the Lesson

- Coach and visiting teachers observe the lesson

#### Post-Lesson Debrief

- Coach and teachers debrief the lesson
- Coach and teachers set future goals

# Embedded Coaching Series

Embedded Coaching is a blend of Learning Labs and Improvement Coaching.

It is designed for grade level teachers to deliberate about shared classroom experiences and can be facilitated in person or through video.

Embedded Coaching includes:

- Goal and Task Selection
- Pre-Planning Conference
- Teaching the Lesson
- Post-Observation Conference

---

## Embedded Coaching Cycle Overview

---

### Goal and Task Selection

- Coach and teacher communicate
- Coach and teachers solve problem and anticipate student responses

### PLC Pre-Planning Conference

- Coach and team agree on pedagogical goal for lesson
- Coach and teacher review lesson plan

### Teaching the Lesson

- Instructional Specialists observes lesson in multiple classrooms
- Teachers teach the lesson

### Post-Observation Conference

- Coach and teachers debrief the lesson
- Coach and teachers set future goals

# Improvement Coaching

Coaches, acting as thought partners, will support individual teachers through the process of planning, delivering and reflecting on deep mathematical experiences.

Coach and teacher will collaborate on rapid “Plan-Do-Study-Act” (PDSA) cycles by implementing change ideas, collecting and analyzing data, and using data to guide instructional practices.

The classroom experience can take on different forms including:

- Teacher implements the lesson
- Video recordings
- Coach models “exemplary lesson”
- Coach and teacher co-teach a lesson

---

## Improvement Coaching Cycle Overview

---

### Goal and Task Selection

- Coach and teacher communicate
- Coach and teacher independently solve problem and anticipate student responses

### Pre-Observation Planning Conference

- Coach and teacher agree on “change idea”
- Coach and teacher review lesson plan

### Teaching the Lesson

- Teacher focuses on pre-conference goals
- Observer assists in limited/strategic ways and collects data

### Post-Observation Conference

- Coach and teacher debrief the lesson
- Coach and teacher set future goals

# Looking at Student Work

These sessions are driven by the belief that every student has strengths and understandings around any given topic.

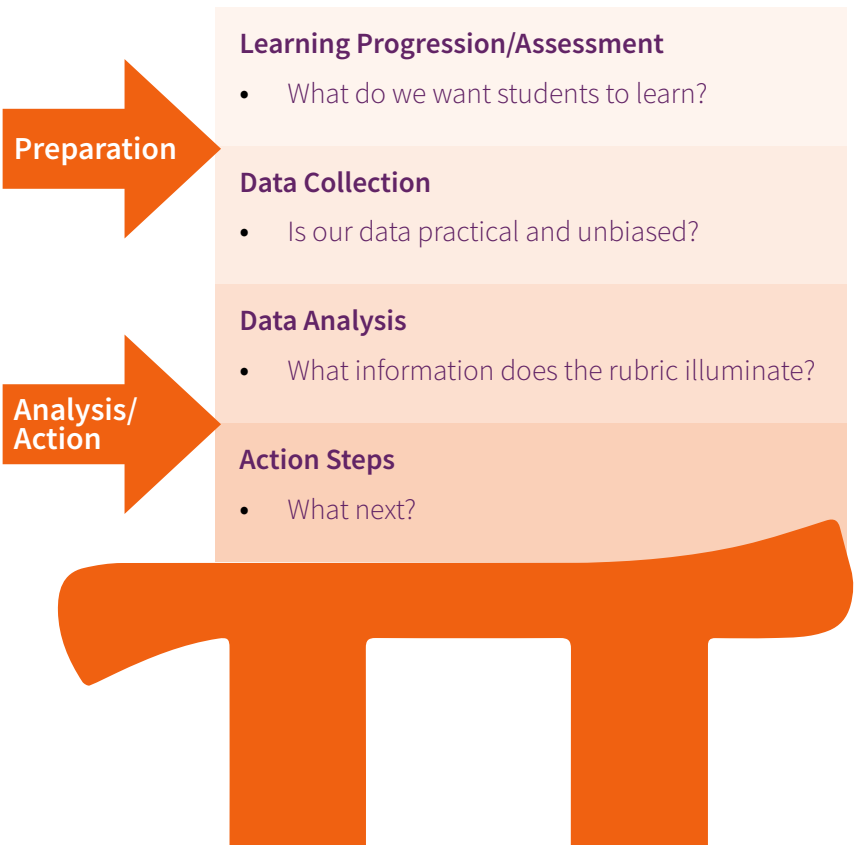
Collectively teachers will:

- Examine learning progressions around a focused learning goal
- Identify specific criteria for evidence of student learning
- Reach consensus using the “Evidence of Student Thinking” rubric
- Commit to implementing an action plan prior to next meeting

---

## Looking at Student Work

---



## Administrator Learning Walks

The purpose of Administrator Learning Walk is to promote productive conversations about instruction and build capacity of instructional leaders to notice best practices in math teaching and learning while looking for trends across classrooms ; NOT intended for teacher evaluation purposes.

**Administrator Learning Walks are to align all stakeholders/ participants to the vision for excellence in mathematics instruction.**

It is important that the following members of the partnership teams participate in the Admin Walks: Math314 Instructional Specialist, Institute for School Partnership (ISP) Research and Development team member, and building administrator(s) and coaches.

---

### Administrator Learning Walk Overview

---

#### Pre-Meeting

- Observation team meets to: Preview protocols / Discuss current practices / Set intentions

#### Classroom Visits

- Observation team circulates visiting math classrooms to: Spend ten minutes or more in each class / Collect data

#### Teaching the Lesson

- Observation team convenes following each class to: Reflect on observations / Record data on intended goals

#### Post-Observation Conference

- Share take-aways / Consider strategies / Create action steps

# Instructional Leadership Series

The Instructional Leadership Series works in concert with Administrator Learning Walks to **provide administrators a toolkit for coaching teachers toward high quality instructional planning and implementation.**



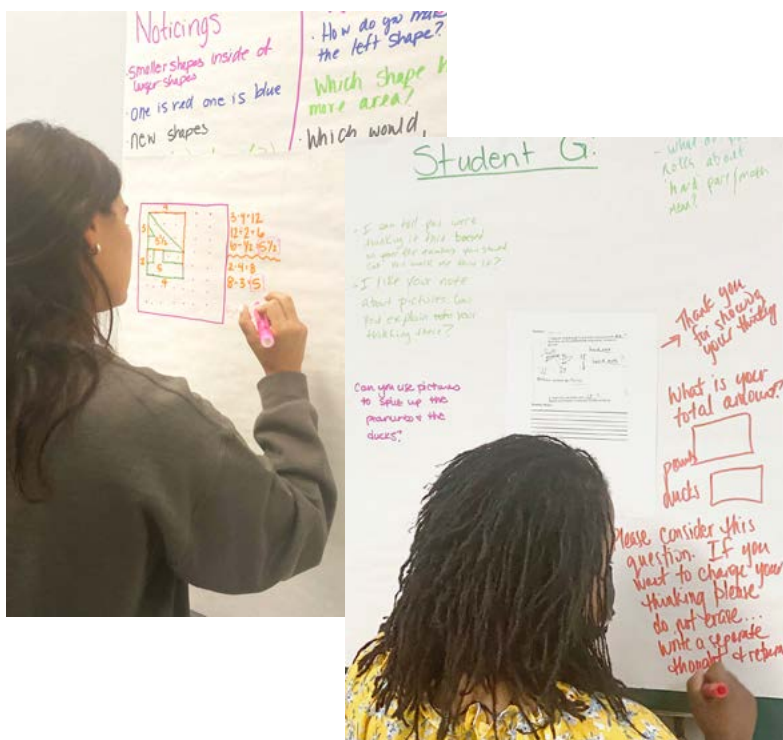
“This process has been so impactful. I truly believe that this has been the most beneficial PD I have experienced. The Change ideas the teachers have tried truly are setting our teachers up for success with High Level Tasks.”

– Ritenour, Administrator



“Research shows that real change requires more than one-off learning sessions. A blend of human-centered professional learning, embedded supports and systems design must align in order to achieve lasting transformation.”

– Victoria May, ISP executive director





# The ISP Partnership Approach

At the Institute for School Partnership we believe existing challenges are extraordinary and unique to each situation and location. Meeting them can't be achieved without purposeful cooperation with those in the community who are doing the daily work of educating children. That is why our methodology is based on partnership with local schools and districts.



## ISP Signature Programs



## ISP Collaborative Partnerships



●  
Research Practice Partnership

●  
Leadership and Team Training

●  
Educator Recruitment and Retention

●  
Embedded Classroom Coaching

●  
Professional Learning

●  
Curriculum and Materials

●  
Classroom/Home Learning Resources

●  
STEM Career Awareness and Interest

●  
Campus/Community Connections

●  
Critical Equity Lens

# Why Us?

## The ISP Advantage

### **PARTNERSHIP**

Partnership is in our name. ISP programs are founded on a promise of collaborative planning and customizing the plan to meet district needs.

### **EQUITY**

We believe that the primary driver for enabling ALL students to achieve in mathematics is improved instruction.

### **EXPERTISE**

Our Math 314 instructional experts have a wealth of knowledge in K-12 instruction and professional learning.

### **EXPERIENCE**

The ISP has 30 years experience developing high leverage teaching practices, using formative data and inquiry to adapt instruction and support learning.

### **LOCAL**

We are local, which provides opportunity for long-term, coherent planning and programming.

### **OUTCOMES ORIENTED**

We care about results. Your student results become our student outcomes. We hold ourselves accountable to measuring the impact of our work together.

### **AFFORDABLE**

We are a non-profit organization and currently have a funding stream that allows us to offer programs as a cost-share model.

## **The Institute for School Partnership**

at Washington University has developed the Math314 initiative to improve mathematics learning in our region by designing programs that produce and support equitable learning environments.

[schoolpartnership@wustl.edu](mailto:schoolpartnership@wustl.edu)  
(314) 935-6846

NOTICE



WONDER