Math LeaDs
Math Leadership Development

AGENDA
7:00 Welcome and Introductions
7:15 Leadership
7:45 Math Teacher Leadership Framework
8:15 Math LeaDs Project
8:45 Next Steps
   Closing
   Exit Ticket

NORMS
● Model by example
● Time on Task
● Encouraging talk from all - Share “air time”
 ● (Practice leadership skills)
Leadership Style Quiz 1

Leadership Style Quiz 2

Review
Building Your Team

Leadership
Teams
What Makes a Team Work?

Think of a team you’ve been on. What made it either successful or unsuccessful?

Spend about 5 minutes in a breakout room discussing the attributes of your team experiences.

Share Out After Breakout Rooms
Research on Successful Teams:

- Collective intelligence is better than average IQ
- You don’t want all superstars
- The greatest predictor of a team’s success is social sensitivity or empathy
- The greatest predictor of a team’s failure is competition
- Google’s five-year study of highly productive teams found that the most important dynamic that set successful teams apart was psychological safety—team members feeling safe to take risks and be vulnerable in front of each other.
Who do you want on your team?

Discuss in breakout rooms:

What is a general type of person that you might want on your team as you attempt to implement change in your school or district?

Share out with whole group
Who do you WANT on your team?
Preempt Team Conflict
Self-Determination Theory

Deci & Ryan, 1985

Motivation

Competence
The experience of mastery and being effective in one's activity

Autonomy
The feeling one has choice and willingly endorsing one's behavior

Relatedness
The need to feel connected and belongingness with others
Next Time!

Program Audit/Needs Assessment

YES

LET'S GET IT DONE!
Framework for Leadership

Guiding Principles 3: Empower and Nurture a culture of productive professionalism

“Leaders become great, not because of their power, but because of their ability to empower others.”

John C. Maxwell
Guiding Principle:
Empower and Nurture a Culture of Productive Professionalism

The Big ideas

1. Beliefs and Mindsets
2. Building Relationships
3. Culturally Sustaining Practices

Imperatives
Empower and Nurture a Culture of Productive Professionalism

Big idea 1: Beliefs and Mindsets

Ensure assumptions, beliefs, expectations and habits are examined in order to shape the school or department culture around teaching and learning of mathematics.
Empower and Nurture a Culture of Productive Professionalism

Big idea 1: Beliefs and Mindsets

Ensure a culture of reflection, refinement, and action focused on continuous improvement win mathematical learning.
Empower and Nurture a Culture of Productive Professionalism

Types of Knowledge

**Mathematics Content Knowledge**
Refers to a person's understanding of the skills, concepts, applications, reasoning methods, and connections within mathematics that are prerequisite to what is being taught, are aligned with what is being taught, and build from what is being taught.

**Pedagogical Content Knowledge**
Refers to the critical knowledge that links specific mathematics content with effective mathematics instruction. This knowledge is what enables a skilled teacher to determine the most effective instructional strategies for particular content.

**Mathematics Curriculum Knowledge**
Is an understanding of how to sequence and organize the content for teaching. Typically, this sequence follows established learning progressions that are aligned with state standards and show how mathematical ideas flow from one grade or course to the next.

**Mathematical Knowledge for Teaching**
Is a kind of professional knowledge of mathematics different from that demanded by other mathematically intensive occupations. This type of knowledge requires teachers to know deeply the interrelationship among mathematical concepts, skills and procedures, much more so than someone who uses mathematics in their occupation, such as an engineer or accountant.
Guiding Principle: Empower and Nurture a Culture of Productive Professionalism

The Big ideas

1. Beliefs and Mindsets
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Imperatives
Empower and Nurture a Culture of Productive Professionalism

Big idea 2: Building Relationships

Ensure assumptions, beliefs, expectations and habits are examined in order to shape the school or department culture around teaching and learning of mathematics.
Empower and Nurture a Culture of Productive Professionalism

Big idea 2: Building Relationships

Ensure a culture of reflection, refinement, and action focused on continuous improvement win mathematical learning.
Empower and Nurture a Culture of Productive Professionalism
Empower and Nurture a Culture of Productive Professionalism

Equality
Choice
Voice
Reflection
Praxis
Dialogue
Reciprocity
Guiding Principle:
Empower and Nurture a Culture of Productive Professionalism

The Big ideas

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Imperatives
Empower and Nurture a Culture of Productive Professionalism

Big idea 3: Culturally Sustaining Practices

Ensure assumptions, beliefs, expectations and habits are examined in order to shape the school or department culture around teaching and learning of mathematics.
Empower and Nurture a Culture of Productive Professionalism

Big idea 3: Culturally Sustaining Practices

Guiding Questions for Cultural Self Awareness:

• What experiences have shaped me?
• Have these experiences developed into asset thinking, growth mindset, or other ways of thinking?
• Do I have low expectations for certain populations?
• Am I, as Dr. Pedro Noguera (2018) says, reproducing patterns of privilege and disadvantage in our classrooms by being a gatekeeper of mathematics?
Empower and Nurture a Culture of Productive Professionalism

Big idea 3: Culturally Sustaining Practices

Ensure a culture of reflection, refinement, and action focused on continuous improvement win mathematical learning.
Empower and Nurture a Culture of Productive Professionalism

Big idea 3: Culturally Sustaining Practices

Guiding Questions for Collegial Conversations:

• How do we integrate social-emotional learning competencies into our mathematics instruction, or do all students have access to challenging mathematical courses?

• How do we address concerns of educational inequalities immediately?

• What measures do we have in place to provide opportunities for anti-biased and pluralistic expressions of the curriculum?
Guiding Principle: Empower and Nurture a Culture of Productive Professionalism

The Big ideas

1. Beliefs and Mindsets
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Imperatives
Empower and Nurture a Culture of Productive Professionalism

BIG IDEA 1: BELIEFS AND MINDSETS
BIG IDEA 2: BUILDING RELATIONSHIPS
BIG IDEA 3: CULTURALLY SUSTAINING PRACTICES

BIG IDEA 1: CURRICULUM LEADERSHIP
BIG IDEA 2: INSTRUCTIONAL LEADERSHIP

BIG IDEA 1: CLASSROOM LEVEL
BIG IDEA 2: TEACHER TEAMS
BIG IDEA 3: DISTRICT LEVEL

BIG IDEA 1: BELIEFS AND MINDSETS
BIG IDEA 2: BUILDING RELATIONSHIPS
BIG IDEA 3: CULTURALLY SUSTAINING PRACTICES
Goals & Research Review

LeaDs Project
LeaDs Project

To support mathematics teachers in your region with research-based math professional learning opportunities.

Math LeaDs will create and implement a learning plan that will focus on addressing the needs of their environment.

Presentation of plan and outcomes.

Estimated time: 30 hours
Research (5) Plan (10) Implement (10) Reflect/Data Collection (5)

Purpose

Objective

Deliverable

Project Description Recording
Math LeaDs Project Handbook
Needs Assessment
Logic Model Situation

Guiding Principles & Essential Actions

Set a Focus

Needs Assessment

Data
Plan for Change

Goals
Applied Research

Goals
Applied Research
Goals

What would you like to influence? Why?

How would you know if you’re successful? What would that look like?

What ideas do you have for collecting evidence? What would you need?
Applied Research

Instructions:
For this section, you will provide research-based support for your Math LeaDs Project plan. We’ve estimated approximately 10 hours of research time for this section. You’ll summarize your research and findings and provide a bibliography. Here are some steps to consider for this section:
1. Search for relevant articles
2. Evaluate sources
3. Identify themes, debates and gaps
4. Outline the structure
5. Write your review

Tools:
- IRMC Library
- Google Scholar
- NCTM archive
- APA Citation guidelines
- How to write a literature review
Next Steps

LeaDs Project
- Formalize Goal
- Applied Research (<one page)
November 2023

Leadership → Teams

Framework → Empower

LeaDs Project → Goals and research review
Pause & Discuss