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

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NORMS

- Model by example
- Time on Task
- Encouraging talk from all - Share “air time”
- (Practice leadership skills)

Learning

- Pre-Session (Online)
- Monthly Meetings (Zoom)

Project

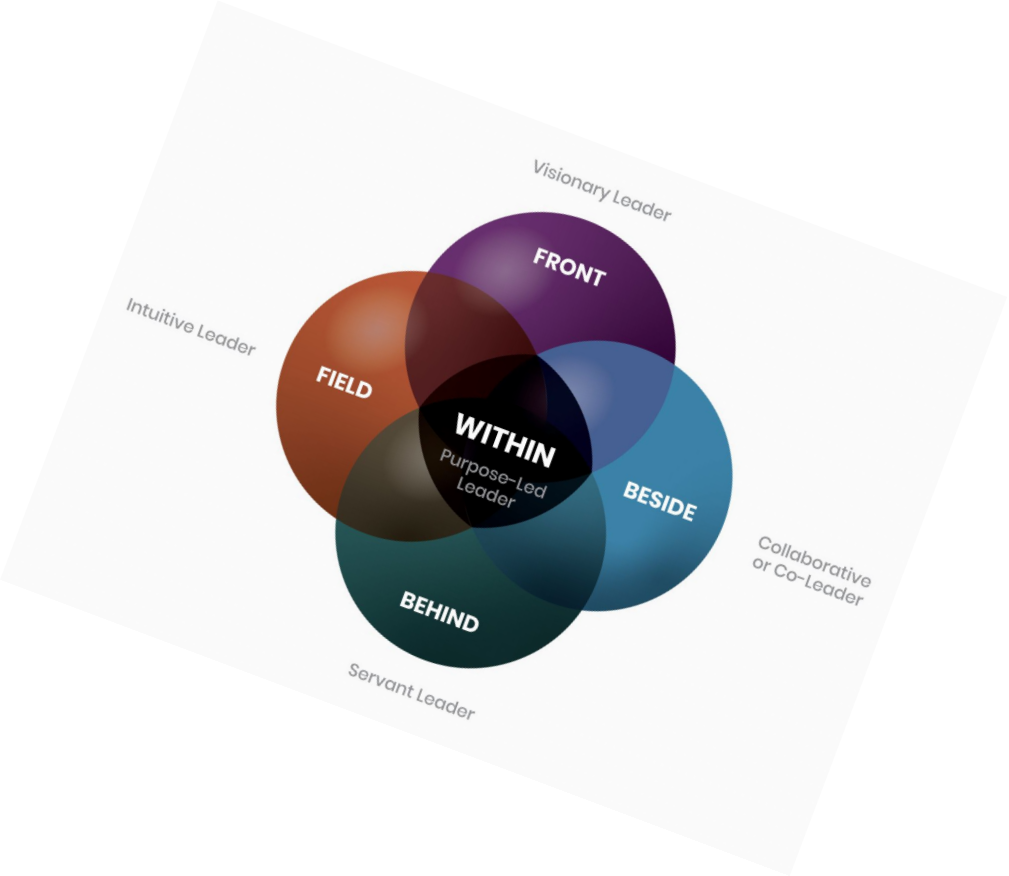
- LeaDs Project

Network

- Monthly Zoom
- June Reflection and Celebration

Review

Leadership Style Quiz 1



Leadership Style Quiz 2

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.

<u>Share Out After Breakout Rooms</u>

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:

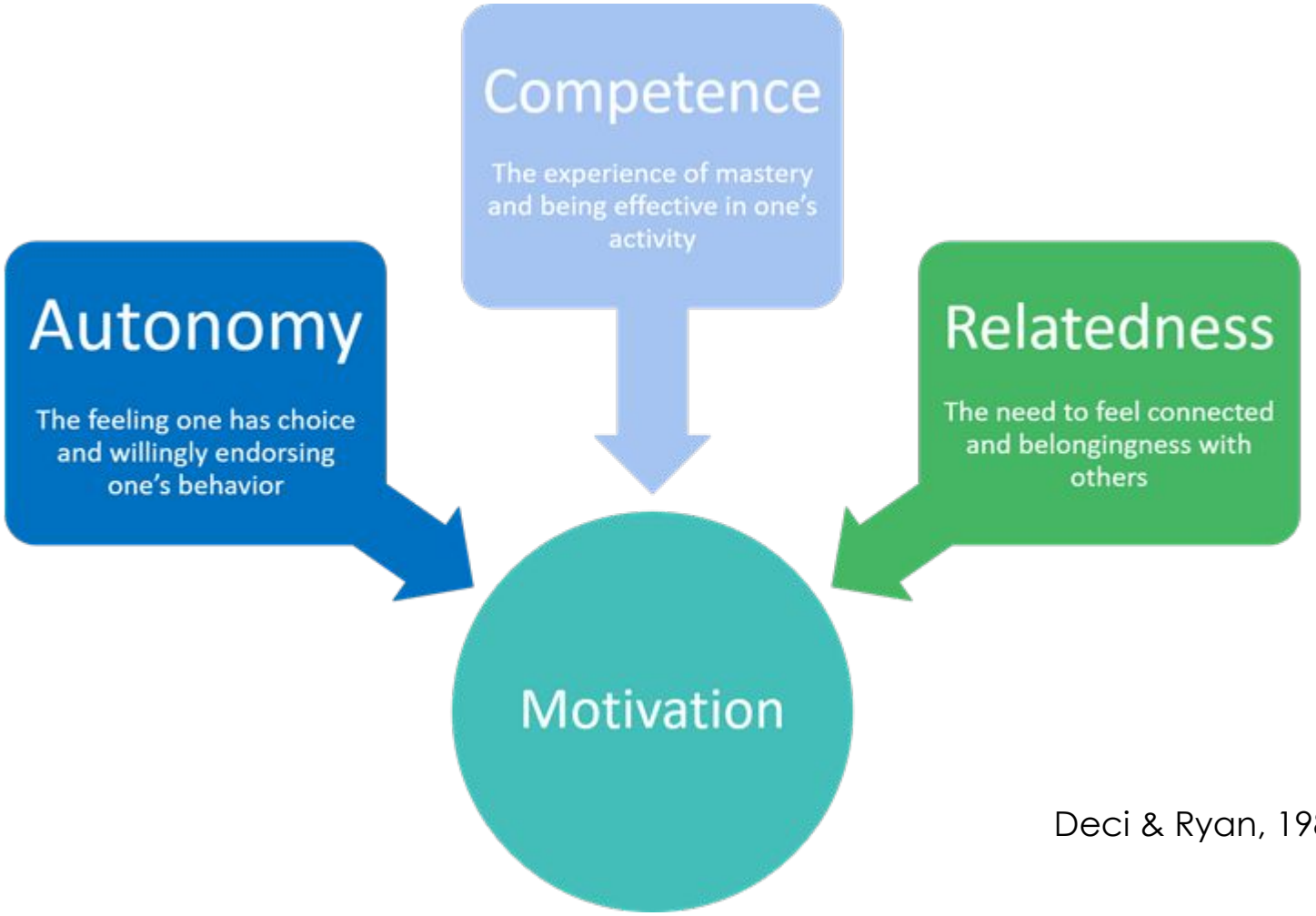
What is a general type of person that you might want on your team as you attempt to implement change in your school or district?

<u>Share out with whole group</u>

Who do you WANT on your team?

Preempt Team Conflict

Self-Determination Theory



Deci & Ryan, 1985)

Next Time!

Program Audit/Needs Assessment

Framework for Leadership

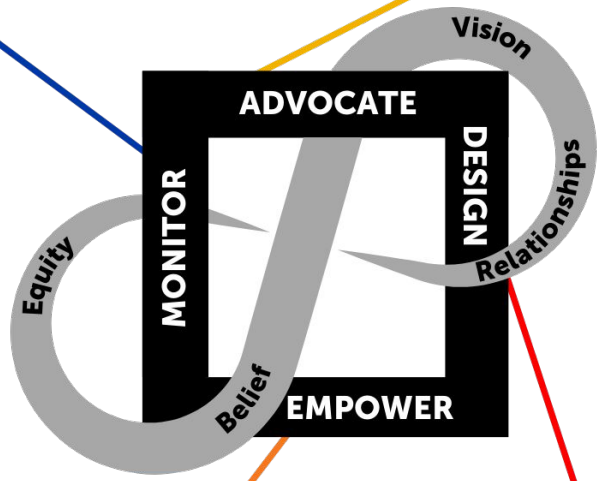
Guiding Principles 3: Empower and Nurture a culture of productive professionalism

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

John C. Maxwell

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

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 instruciton. This knowldege 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 knowldege requires teachers to know deeply the interrelationship among mathematical concepts, skills and procedures, much more so than someone who uses matheamtics in their occupation, such as an engineer or accountatnt.

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 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

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

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
2. Building Relationships
3. Culturally Sustaining Practices

Imperatives

Empower and Nurture a Culture of Productive Professionalism

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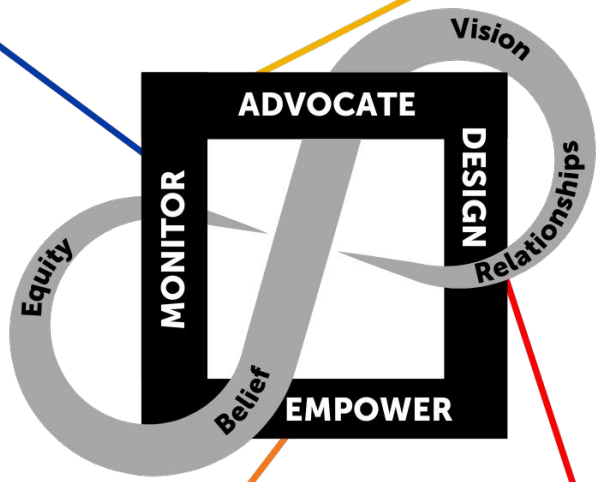

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Goals & Research Review

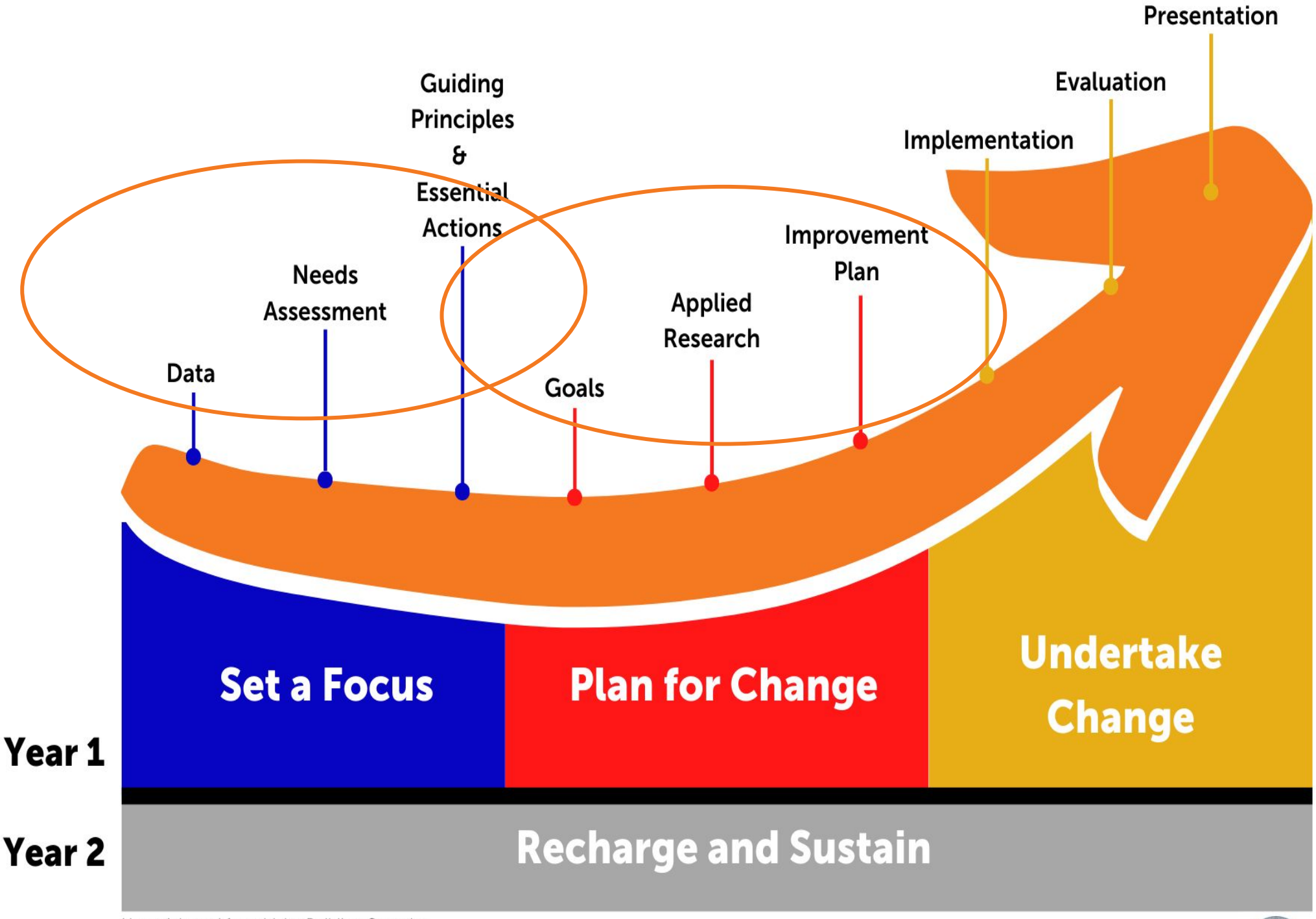
LeaDs Project

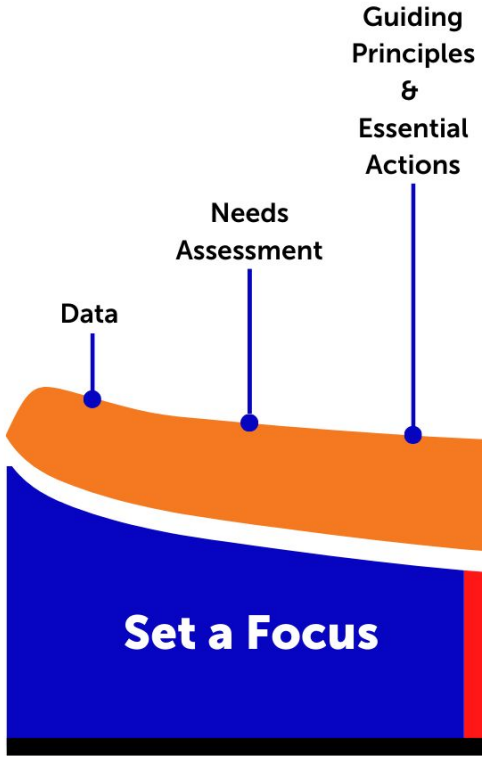
LeaDs Project

Project Description Recording
Math LeaDs Project Handbook

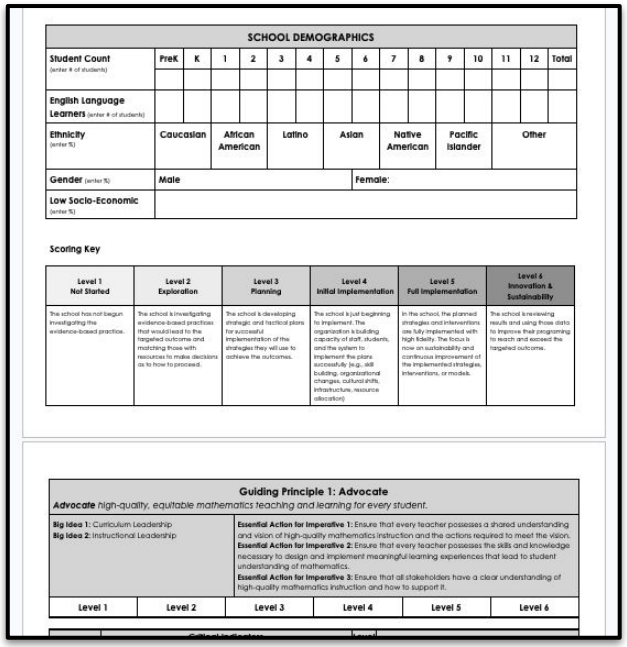
Estimated time: 30 hours
Research (5) Plan (10) Implement (10) Reflect/Data Collection (5)

Purpose	Objective	Deliverable
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.


Presentation
Evaluation
Implementation
Guiding Principles & Essential Actions
Improvement Plan
Needs Assessment
Applied Research
Data
Goals
Set a Focus
Plan for Change
Undertake Change
Year 1
Year 2
Recharge and Sustain



Needs Assessment Logic Model Situation

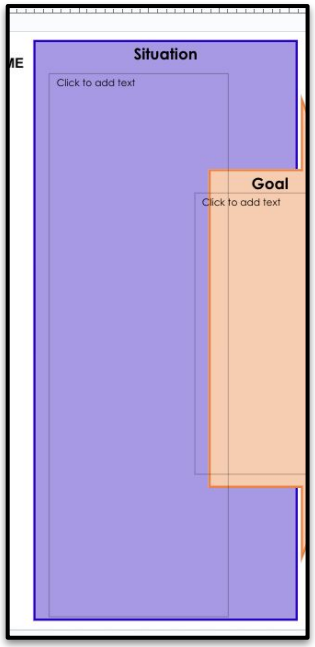


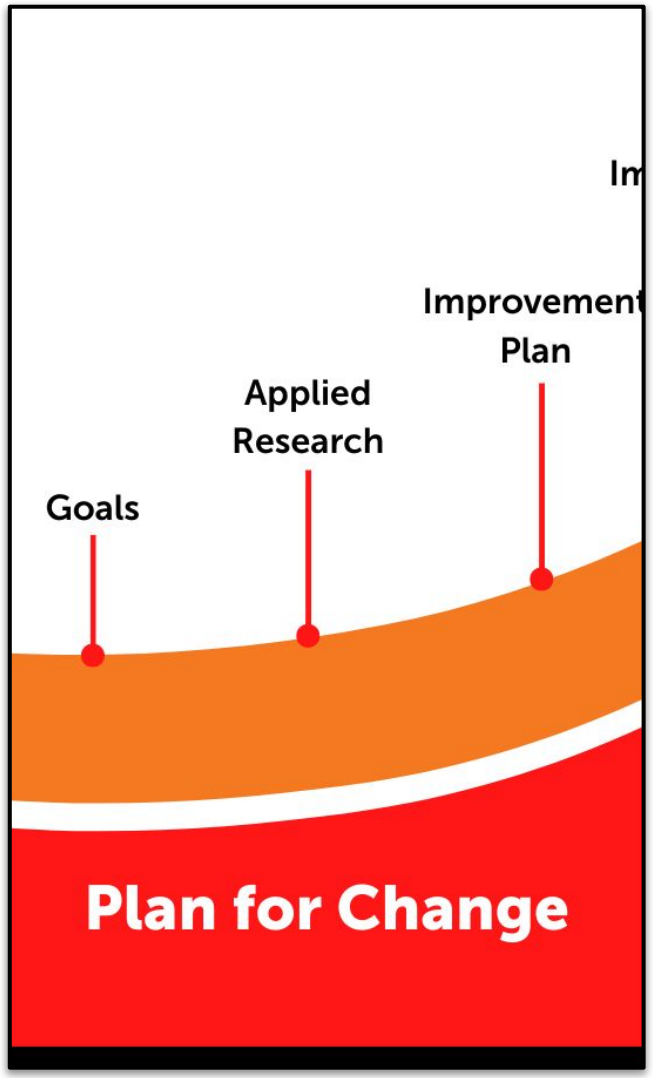
SCHOOL DEMOGRAPHICS															
Student Count (enter # of students)	PreK	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
English Language Learners (enter # of students)															
Ethnicity (enter %)	Caucasian		African American		Latino		Asian		Native American		Pacific Islander		Other		
Gender (enter %)	Male							Female:							
Low Socio-Economic (enter %)															

Scoring Key

Level 1 Not Started	Level 2 Exploration	Level 3 Planning	Level 4 Initial Implementation	Level 5 Full Implementation	Level 6 Innovation & Sustainability
The school has not begun investigating the evidence-based practice.	The school is investigating evidence-based practices that would lead to the targeted outcome and matching those with resources to make decisions as to how to proceed.	The school is developing strategic and tactical plans for successful implementation of the strategies they will use to achieve the outcomes.	The school is just beginning to implement. The organization is building capacity of staff, students, and the system to implement the plans successfully (e.g., skill building, organizational changes, cultural shifts, infrastructure, resource allocation)	In the school, the planned strategies and interventions are fully implemented with high fidelity. The focus is now on sustainability and continuous improvement of the implemented strategies, interventions, or models.	The school is reviewing results and using those data to improve their programing to reach and exceed the targeted outcome.

Guiding Principle 1: Advocate					
Advocate *high-quality, equitable mathematics teaching and learning for every student.*					
Big Idea 1: Curriculum Leadership **Big Idea 2:** Instructional Leadership	**Essential Action for Imperative 1:** Ensure that every teacher possesses a shared understanding and vision of high-quality mathematics instruction and the actions required to meet the vision. **Essential Action for Imperative 2:** Ensure that every teacher possesses the skills and knowledge necessary to design and implement meaningful learning experiences that lead to student understanding of mathematics. **Essential Action for Imperative 3:** Ensure that all stakeholders have a clear understanding of high-quality mathematics instruction and how to support it.				
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6





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

Projects

- IRMC Conference Presenter
- Professional Development Plan
- Math Investigation

Next Steps

LeaDs Project

- ❑ Formalize Goal
- ❑ Applied Research (<one page)

November 2023

Leadership→ Teams

Framework→ Empower

LeaDs Project→ Goals and research review

Pause & Discuss