

Dana Center
Mathematics
PATHWAYS

The Highs and Lows of Co-Requisite Implementation

Panelists: Dr. Linda Braddy, Dr. Beth Lewis
Facilitator: Connie Richardson

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Introducing the Dana Center

The **Charles A. Dana Center** at The University of Texas at Austin seeks to increase equity and access for all students, working primarily in the fields of mathematics and science.

DCMP Vision

The DCMP seeks to ensure that **ALL** students in higher education will be:

- **Prepared** to use mathematical and quantitative reasoning skills in their careers and personal lives,
- **Enabled** to make timely progress towards completion of a certificate or degree, and
- **Supported** and **empowered** as mathematical learners.

www.dcmathpathways.org

Introduction to the Dana Center's Role

- Gather and disseminate data and resources from successful programs.
- Support planning that customizes interventions for diverse Texas community college contexts.
- Focus on a vision for scale and continuous improvement.
- Surface questions and concerns.

Session Outcomes

Participants will:

- Identify key strategies to support implementation.
- Learn from each other.
- Inform the Dana Center's future support efforts.

Table chat

“The Highs and Lows of Co-Requisite Implementation”
What brought you to this session?



Working Definition of Co-Requisite

Co-Requisite Supports:

For students designated as underprepared, the practice of placing those students directly into college-level courses and providing additional support. For the most underprepared, those supports should:

- Be side-by-side with, or embedded within, the college-level course.
- Contain content that is fully aligned with the college-level course.
- Include attention to psychosocial factors to support the students in becoming better learners in ALL of their courses.

The Rationale for Co-Requisites

A Thought Experiment

Assume we had 75% pass rates in all developmental and gateway mathematics courses.

What percentage of students would pass their gateway mathematics course?

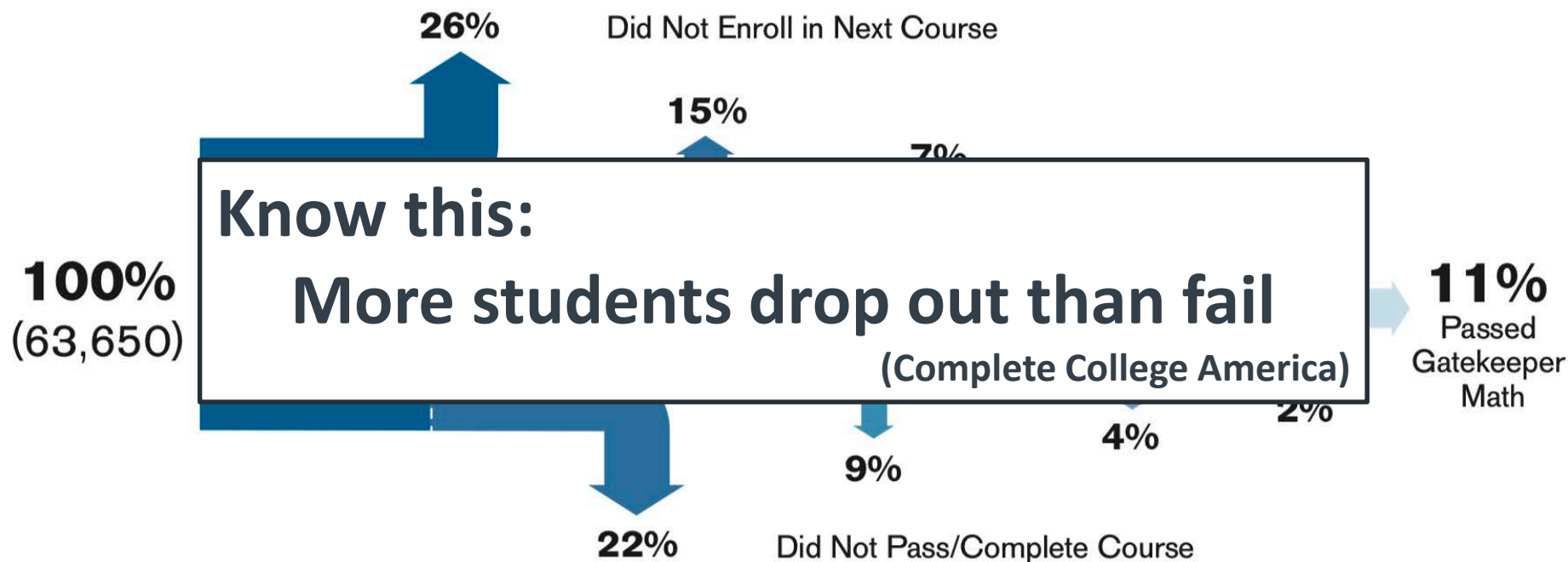
Two levels below gateway: $(100\%)(75\%)(75\%)(75\%) = 42.2\%$

What if 90% persisted at each transition point?

$(100\%)(90\%)(75\%)(90\%)(75\%)(90\%)(75\%) = 30.8\%$

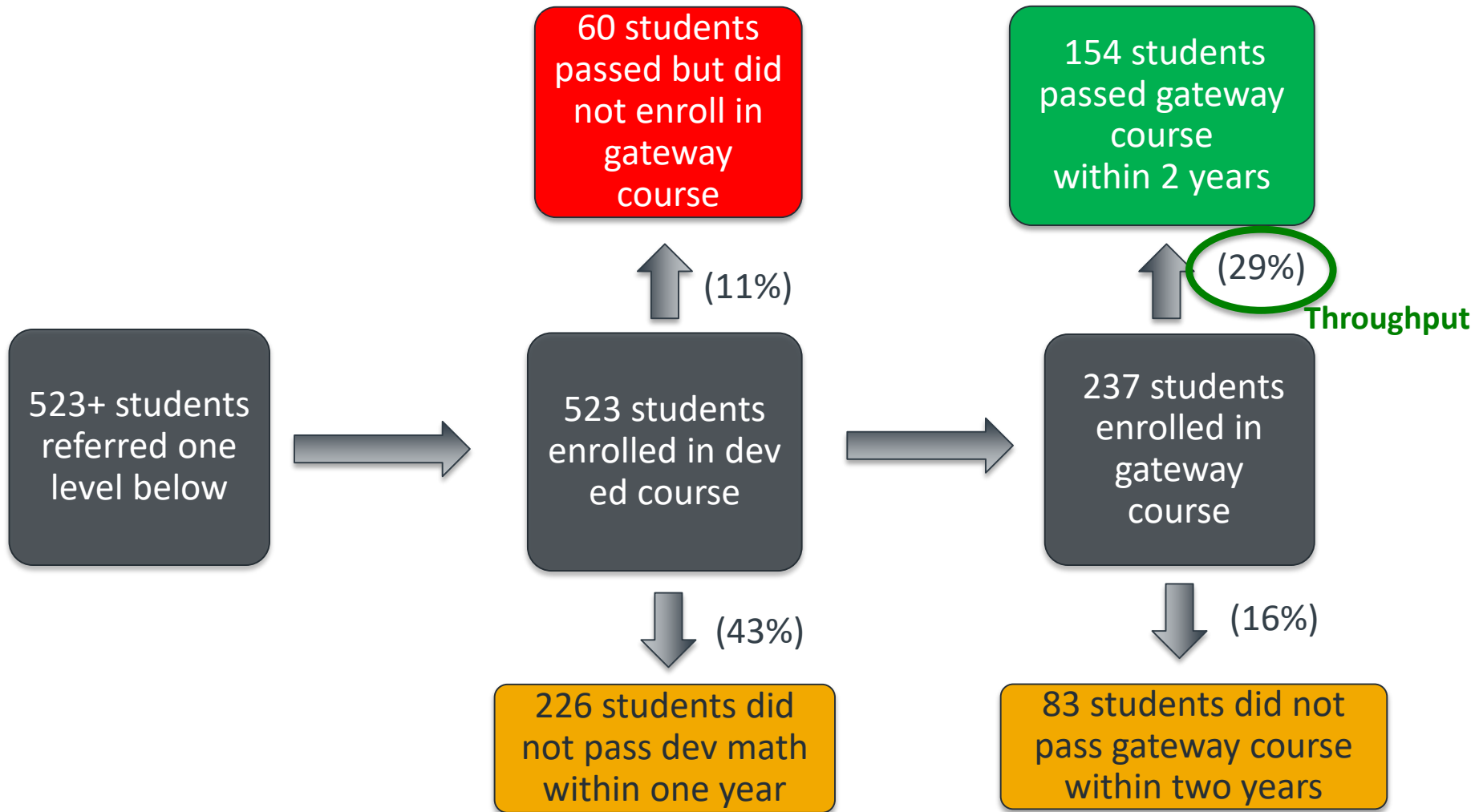
Why Change?

Student Progression Through the Developmental Math Sequence²¹

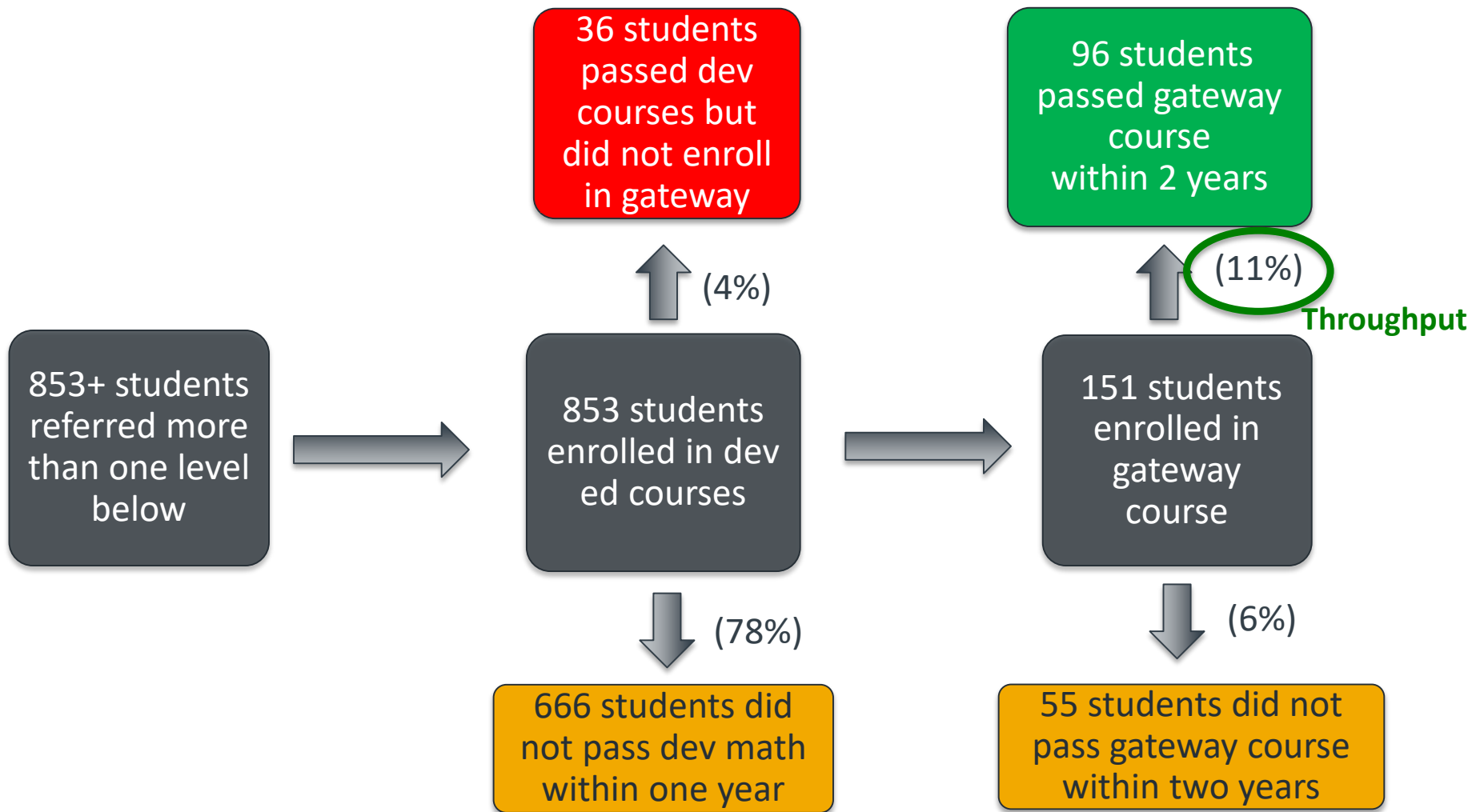


Jagers, S. & Stacey, G. (2014). Community College Research Center, Teachers College, Columbia University, NY, NY. ERIC Number ED565668

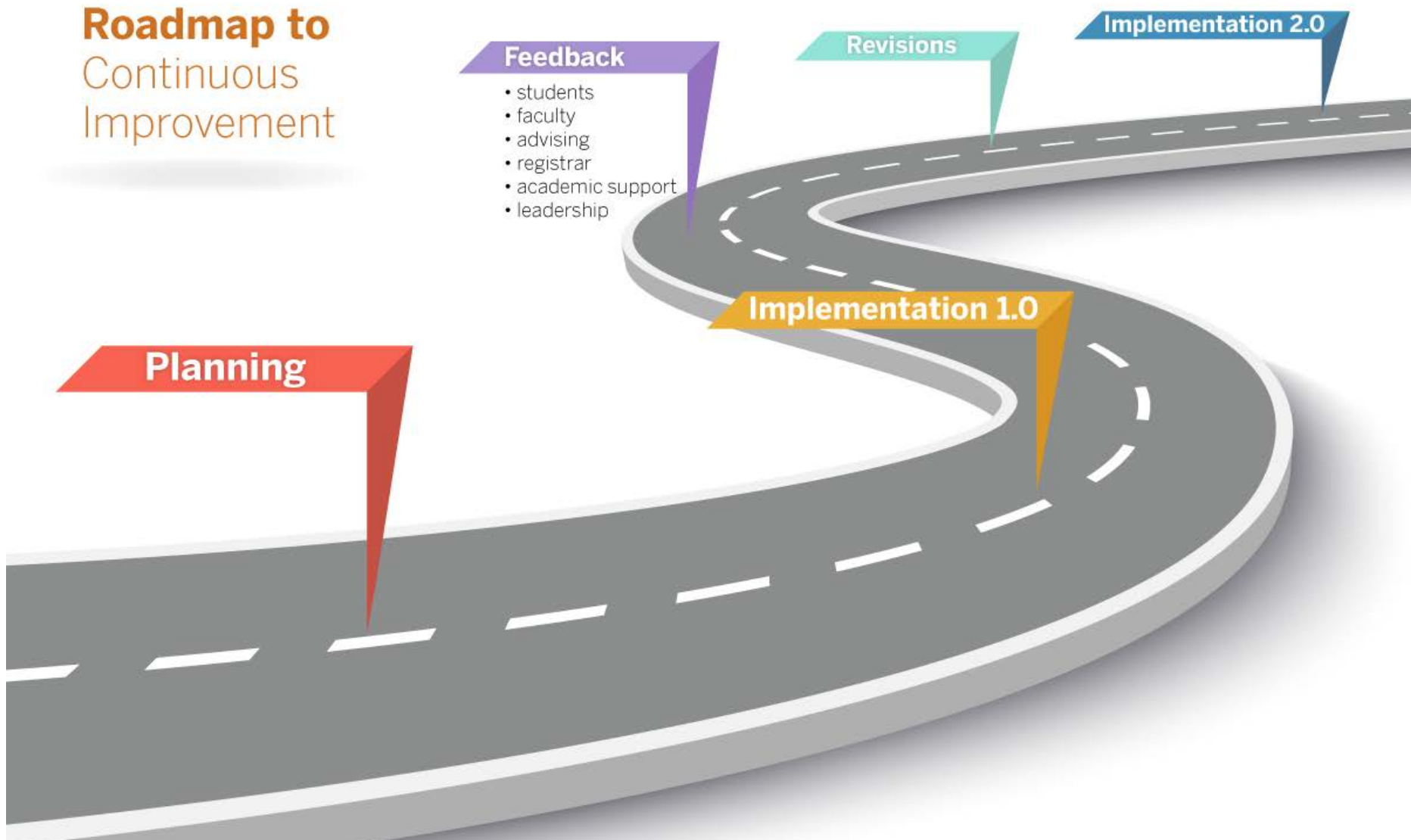
A Closer Look – One Level Below



A Closer Look – More Than One Level Below



Roadmap to Continuous Improvement



Strongly Recommended Best Practices

Do:

- Align content so that students are truly getting just-in-time remediation.
- Provide a sufficient number of hours of support, based on student need.
- Require structured content.
- Run side-by-side or embedded remediation.
- Inspect data regularly.

Don't:

- Run a traditional Intermediate Algebra course side-by-side with the college-level course.
- Determine hours of support based on what is easiest to schedule.
- Run a homework hour.
- Use 8-week developmental then 8-week college-level model.
- Focus solely on individual course pass rates (rather, inspect throughput).

Recommendations

- Math department works together to reach consensus on each college-level course's topics and sequence (develop a common course calendar).
- Math department backmaps from that common calendar to achieve a common calendar for the support course.
- Department provides professional learning to faculty who have always taught developmental algebra but are now teaching statistics support or QR support.
- Department collaborates to choose psychosocial factors on which to focus and provide instruction to students.
- If using 8 week developmental 8 week college level model
 - Enroll students in the entire sequence at the beginning.
 - Allow students who fail the first 8 weeks to proceed.

No Research Base

- Cohort vs. co-mingle
- One instructor vs. two instructors
- One grade vs. two grades
- What to do if the student fails college-level or support

Co-reqs as part of comprehensive redesign

Comprehensive Redesign

Core elements:

- Aligned math pathways with default or recommended math requirements
- Meta-majors with default or recommended math requirements
- Multiple measures placement
- Enhanced advising for those students still deemed underprepared
- Co-requisite supports for those students

Supporting Implementation

Table Chat

What are some barriers/challenges you have faced?

What are assets/resources/supports you can provide to faculty?



Implementation: A broad framework

Getting Started: Commitment and leadership

Planning: Collect and review data to define problem, establish goals, and create a plan.

Implementing: Carry out the plan.

Continuous Improvement: Evaluate and improve.

Implementation: Getting to details

- Essential Actions – the “must-dos”
- Institutions determine what else is needed or important to their situation or students.

Implementation process, page 1

Stage of Implementation	Essential Actions
Getting Started: Leaders identify need, make commitment, and prepare to engage stakeholders through a leadership team.	Action 1: Communicate and maintain a strong and clearly defined institutional commitment. *
	Action 2: Establish and convene a leadership team.
	Action 3: Plan for communication and engagement over time. *
Planning: Cross-functional leadership group collects and reviews data to define problem and establish goals.	Action 4: Gather and review information on the current institutional context.
	Action 5: Define goals.
	Action 6: Create the implementation plan.
	Action 7: Align mathematics pathways to programs of study so that one clear and appropriate pathway is defined for each program.
Implementing: Working groups and individuals follow implementation plan under oversight of leadership team	Action 8: Design, staff, and schedule courses.
	Action 9: Establish processes and structures for student enrollment.
Continuous Improvement: Working groups and individuals follow evaluation and communication plans under oversight of leadership team.	Action 10: Monitor the implementation progress through scheduled check-ins with different stakeholders and departments to ensure improvement over time. *

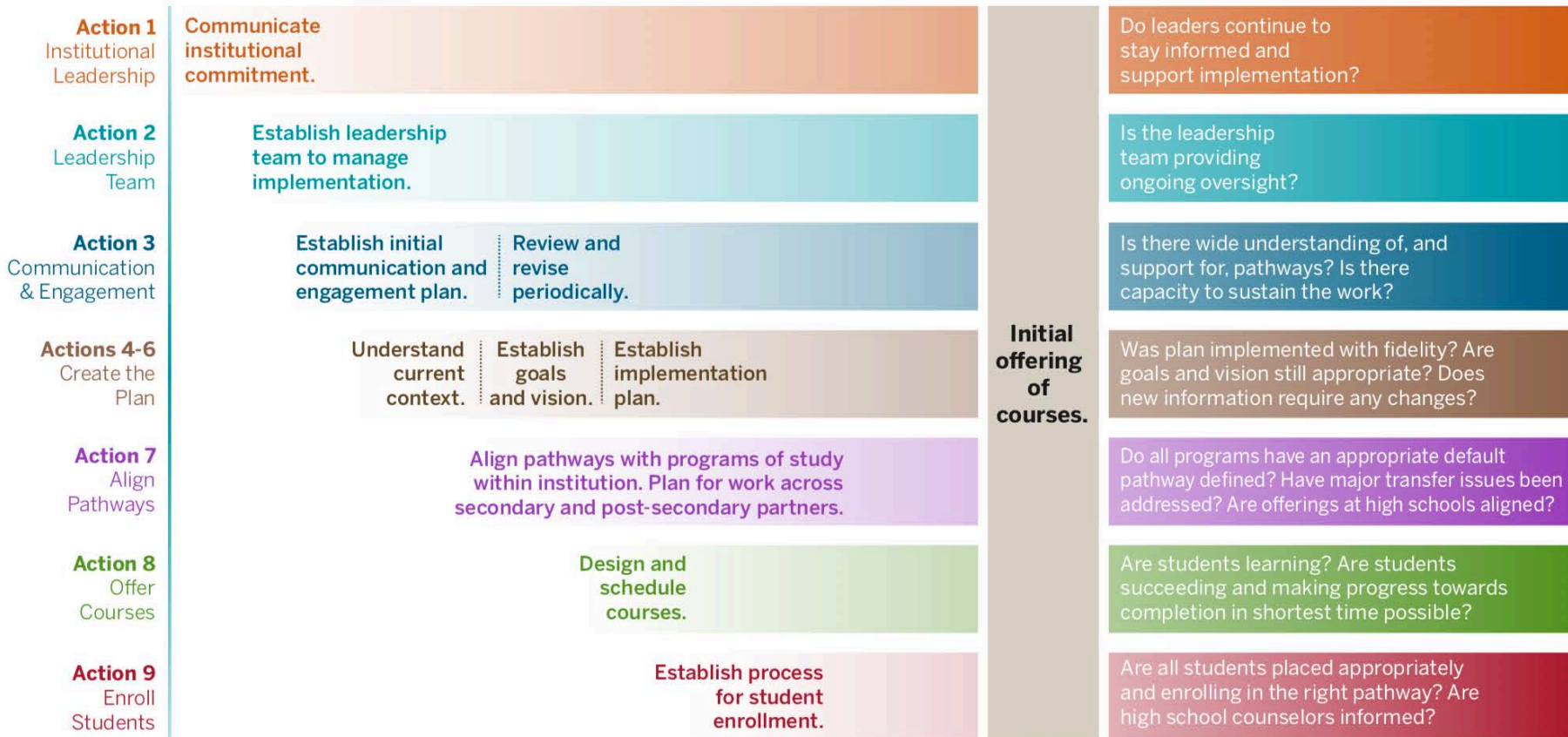
Implementation Process

Taking Mathematics Pathways from Planning to Normative Practice

Actions 1–9 Lead to Offering Courses

Action 10: Continuous Improvement

Use guiding questions to review data, revise, and improve across all strands



ACTION OVER TIME

ACTION OVER TIME

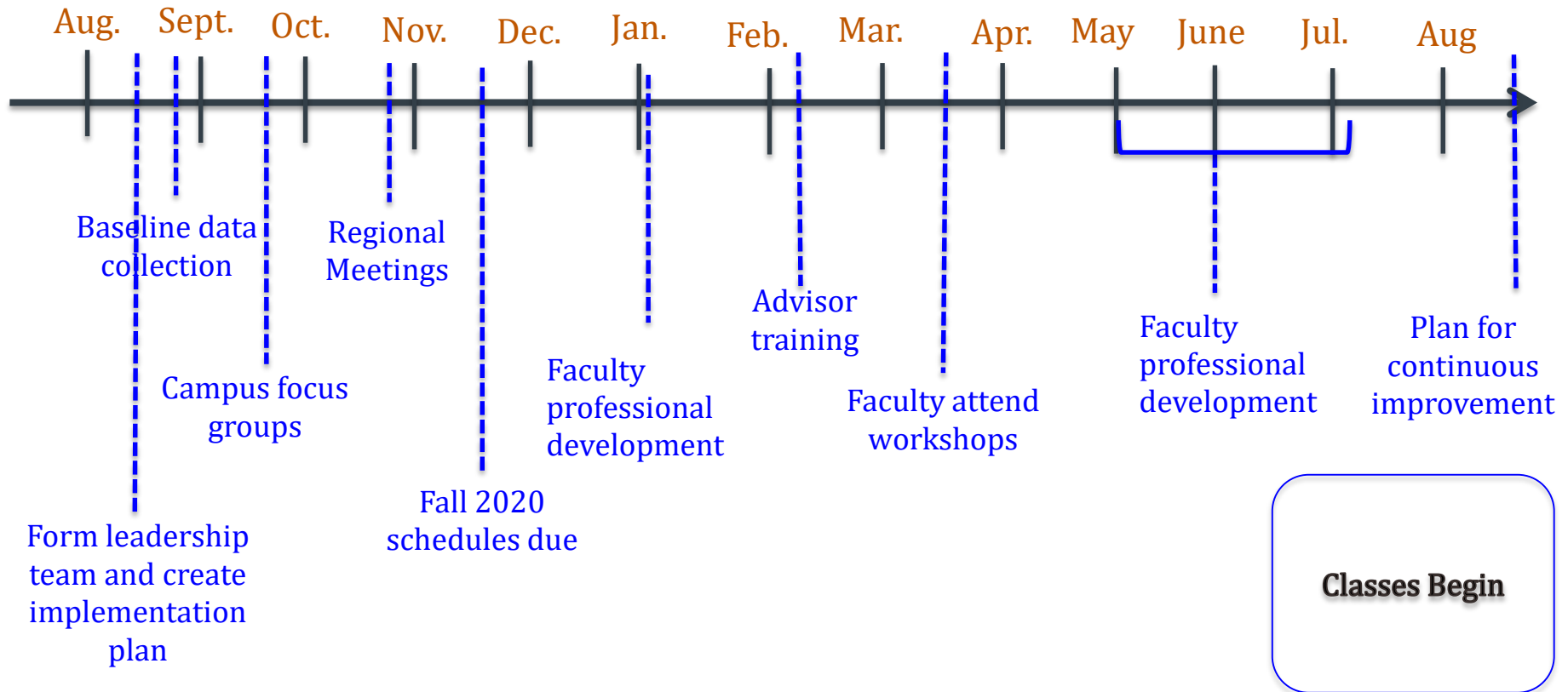
ACTION OVER TIME

Assessing progress: Getting started

Purpose: Assess current status on first two activities.

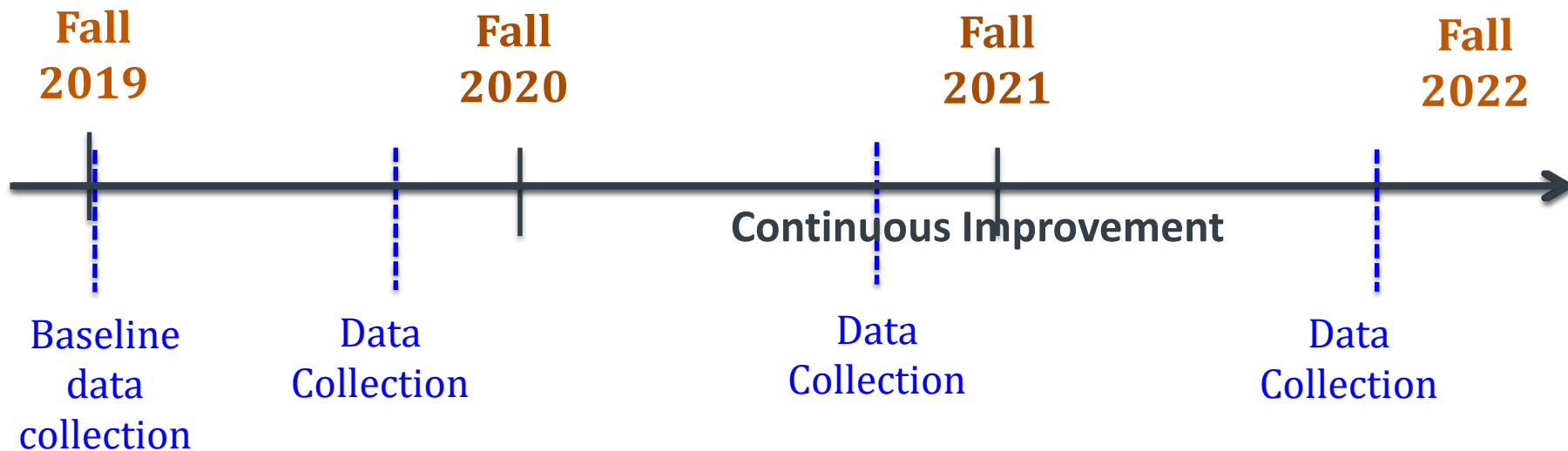
- Read the description of a “5”.
- Rate your institutional progress from 1 to 5.
- Document accomplishments and strengths.
- Document next steps.

Sample Timeline of Activities



Classes Begin

Sample Timeline of Activities



Discussion, Questions, Next Steps

Contact information

- General information about the Dana Center:
www.utdanacenter.org
- Dana Center Mathematics Pathways Resource Site:
www.dcmathpathways.org
- To receive monthly updates about the DCMMP, contact us at:
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- Connie Richardson (Manager, Course Programs, Charles A. Dana Center): cjrichardson@austin.utexas.edu
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About the Dana Center

The **Charles A. Dana Center** at The University of Texas at Austin works with our nation's education systems to ensure that every student leaves school prepared for success in postsecondary education and the contemporary workplace.

Our work, based on research and two decades of experience, focuses on K–16 mathematics and science education with an emphasis on strategies for improving student engagement, motivation, persistence, and achievement.

We develop innovative curricula, tools, protocols, and instructional supports and deliver powerful instructional and leadership development.



The University of Texas at Austin
Charles A. Dana Center

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