

# Overview

## Background

In 2012, the Charles A. Dana Center at The University of Texas at Austin launched the New Mathways Project (NMP) through a partnership with the Texas Association of Community Colleges to address one of the greatest obstacles to degree completion: developmental and gateway mathematics.

Through this partnership, colleges and universities across Texas work together to implement the NMP, which redefines the structure and content of mathematics programs and presents an innovative model for systemic work at scale.

The success of the NMP in Texas has inspired leaders in 11 additional states to implement the NMP model. This work has the potential to help hundreds of thousands of students successfully learn meaningful mathematics content and progress towards degree completion.

## The NMP Model

The NMP is a systemic approach to improving student success and completion through the implementation processes, strategies, and structures based on four fundamental principles:

1. Multiple mathematics pathways with relevant and challenging math content aligned to specific fields of study.
2. Acceleration that allows students to complete a college-level math course more quickly than in the traditional developmental math sequence.
3. Intentional use of strategies to help students develop skills as learners.
4. Curriculum design and pedagogy based on proven practice.

Implementation of the principles at scale requires coordinated work at *multiple levels of the system*—classroom, institutional, state, and national—an approach unique to the NMP.

**Multiple levels of work** ..... **using a variety of strategies** ..... **to achieve one goal**



## RECOMMENDATIONS FOR EFFECTIVE MULTIPLE MATHEMATICS PATHWAYS IMPLEMENTATION

Implementing multiple mathematics pathways requires attention to both supply and demand — the supply of robust, high-quality mathematics offerings, and students' demand for those options and alternatives, particularly from students pursuing majors that do not require algebraically-intensive courses. The following recommendations, distilled from the experience of these institutions, offer action steps for institutions planning to develop multiple pathways and for those where implementation is underway but not yet scaled.

### Define the problem

so that the case for collective action is clear.

Change leaders can create a clear problem definition; leverage data; communicate with faculty in math and partner disciplines; understand institutional context regarding course success and alignment of math pathways to programs of study.

### Engage faculty and administrators across math and other departments.

Engage math faculty and department leadership in assessing current math courses; build broad coalition of support and articulate benefits of multiple pathways; determine whether to develop new courses and/or work with partner disciplines to refine existing courses to meet student needs.

### Involve advisors

so that students get the right messages.

Advisors can drive student success by communicating that appropriate mathematics pathways increase the likelihood of completion — saving time and money — and by guiding students to appropriate math pathways. Orient advisors to the benefits of math pathways; develop processes and policies that support first-year students and undeclared majors.

### Ensure new math pathways are transferable and specify math requirements for each major.

Articulate clear transfer policies with partner institutions; communicate regularly about which programs should or should not use college algebra; use common course numbers to simplify communication; create program maps for students and advisors outlining math pathways, course sequences, and requirements for majors.

### Situate math pathways in a broader redesign of credential programs.

Embed math pathways in efforts to redesign developmental education and programs of study; implement strategies to support completion; accelerate student choices about programs, courses, and careers through intrusive advising and program mapping.

### Communicate regularly with transfer partners so they understand program requirements and know their university colleagues.

Coordinate math requirements for majors with other institutions; encourage faculty to compare course materials; support regional alignment of math pathways by hosting workshops; adopt regional memoranda of understanding; provide advisors with accurate information about transfer and applicability of math courses.

### Compare school requirements and policies with those of other institutions in the state.

Compare your institution's progress with peers to accelerate consensus, plans, and implementation and to secure support from state actors; use Dana Center and Texas Higher Education Coordinating Board resources; align math requirements for particular majors; address transfer issues; share practices and policies.

The full report is available at  
[www.utdanacenter.org/nmp/modernizing\\_pathways](http://www.utdanacenter.org/nmp/modernizing_pathways)

