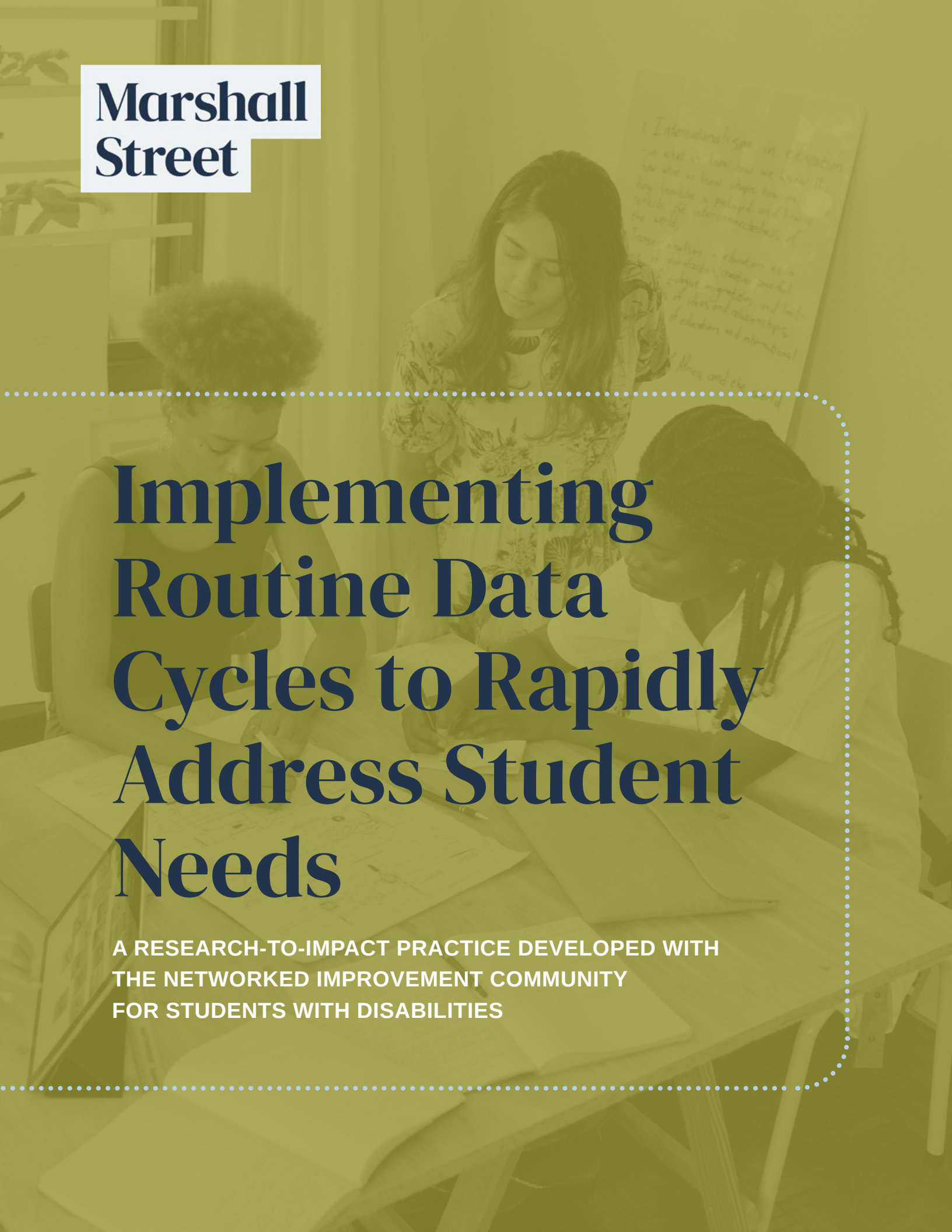
Marshall Street



Implementing Routine Data Cycles to Rapidly Address Student Needs

A RESEARCH-TO-IMPACT PRACTICE DEVELOPED WITH THE NETWORKED IMPROVEMENT COMMUNITY FOR STUDENTS WITH DISABILITIES

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Implementing Routine Data Cycles to Rapidly Address Student Needs

Implementation Level

- [ ] District/Central Office
- [ ] School
- [x] Program/Department
- [x] Classroom

Who Implements

- [x] Teacher(s)
- [ ] Instructional Coach
- [x] Principal
- [x] Central Office Leadership
- [ ] Specialist

Practice Overview

What is the Practice?

The regular analysis of student data to proactively design classroom-based interventions, typically using a customized data dashboard.

What do we mean by student data for interventions?

For the purposes of this practice, "student data" includes any quantitative or qualitative data that is:

1. **Aligned:** directly connected to the CMO or school's mission or goals for student learning, giving attention to the needs of priority subgroups;
2. **Regularly collected:** routinely collected at regular and predictable intervals, often on a weekly or biweekly basis;
3. **Actionable:** within a teacher's locus of control so they can take steps to improve student performance on the variable measures; and
4. **Student-level:** related to student outcomes, whether that be academic, social/emotional, behavioral, or for college, community, or career readiness.

Student data may include individual assignments, test grades, and mastery of standards.

Why is the Use of Data Important?

Data-driven instruction is foundational to effectively implementing multi-tiered systems of supports (MTSS). Research shows that a lack of knowledge and training around data-driven problem solving for teachers, administrators, and district staff is a key barrier to implementing MTSS with fidelity.[1] Schools can remove this key barrier by thoughtfully designing systems for teachers to regularly and frequently use data to inform tiered supports. Disaggregating student data by priority populations, such as students with disabilities, helps educators think about the instructional decisions they are making in the classroom, as well as interventions that best serve these students.

School Spotlight

Collegiate Academies created a data dashboard to track student mastery of Louisiana's prioritized standards for students with disabilities. This dashboard helps teachers at Collegiate customize instruction by allowing them to identify specific high priority standards where students are struggling and to adapt future instruction for those students. The dashboard provides teachers with the data necessary to better individualize instruction for each student, ensuring that all students meet each of the standards and master content necessary for graduation.

Why it Works

DISAGGREGATED DATA ALLOWS FOCUS ON PRIORITY POPULATION.

Whole-class, or aggregate, data masks differences that may exist between groups or individual students. Therefore, it is important that data dashboards are able to disaggregate by group — particularly for the different subgroups within our priority population, students with disabilities who are Black and/or Latinx, and living in poverty — allowing teachers to unpack what is happening in their classroom across subgroups. With this detailed data, teachers can ensure they are responding to the students who most need additional support.

DATA CAN IDENTIFY AND MITIGATE BIAS IN THE SYSTEM.

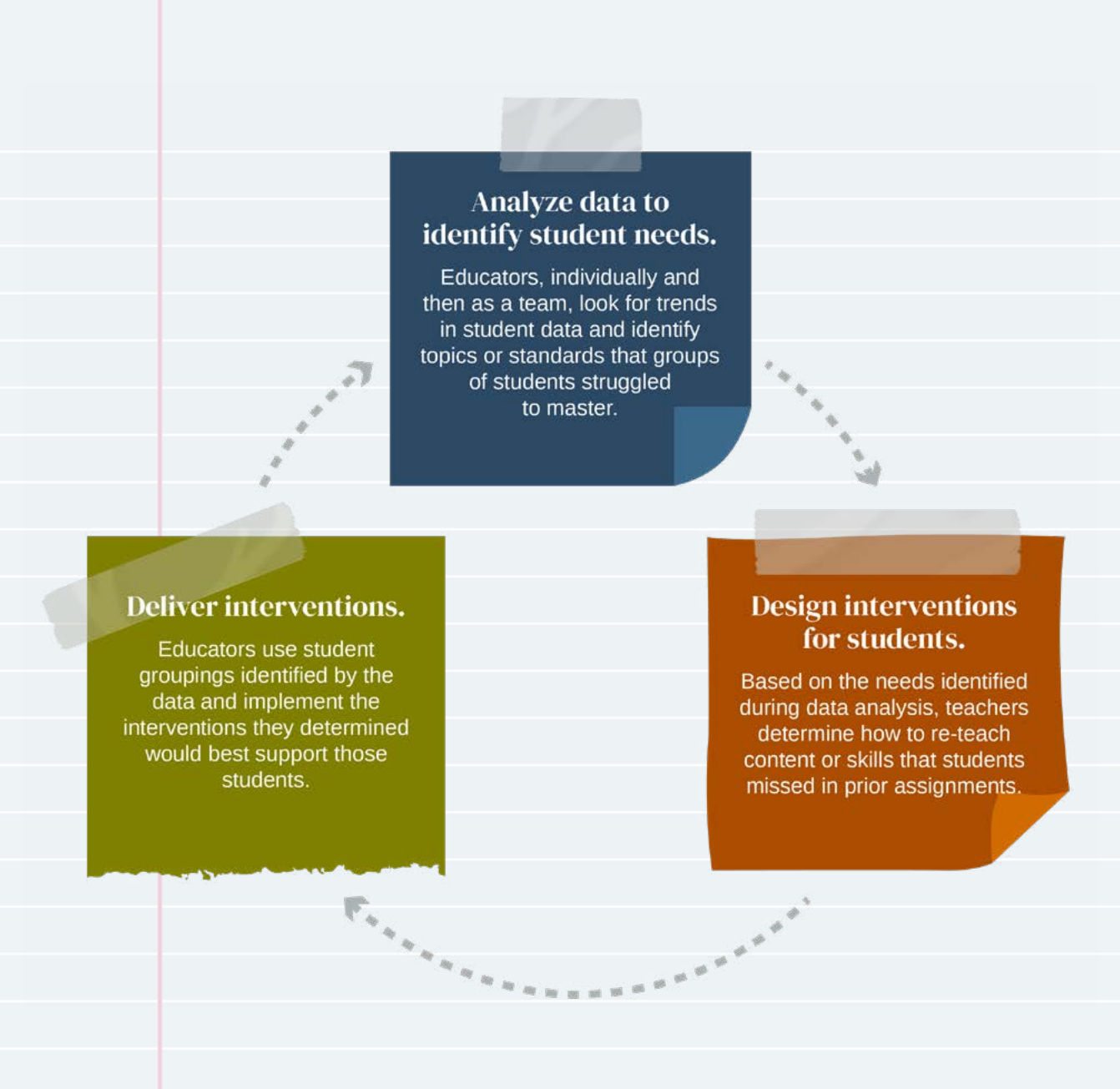
Reviewing and comparing data across student subgroups can help teachers reflect on how instruction was planned, lessons were delivered, and assignments were graded. When educators have access to disaggregated data, they can identify trends and patterns of student performance on a variety of mastery assessments, such as standardized assessments or teacher-made assignments, to see discrepancies and reflect on their own systems or practices that may contribute to them.[2]

CUSTOMIZED DATA VISUALIZATION ENHANCES EXISTING SYSTEMS.

When schools have an existing student information systems (SIS), they are able to provide efficient analysis and monitoring that helps teachers analyze student data in order to respond to individual needs. Access to these systems, and other available data products, make it possible for schools to maintain up-to-date student grades, test scores, disciplinary records, and progress toward goals all in one place. It is especially critical for this priority population that data can be viewed in real time, before students fall behind their peers. The end of a grading period is too late for a student to make up or revise work, demonstrate their knowledge, or earn a passing grade. Timely intervention within the school day can prevent very real repercussions for students, like failing to graduate high school on time.

The Data Analysis Cycle

The data analysis cycle — that is, the process of teachers analyzing data, designing interventions based on that data, and delivering those interventions — is essential to ensure that students who are struggling to master content receive necessary support from teachers to be successful.



Implementation at a Glance

The information in this section provides a high-level view of what to consider when implementing this practice. Enabling Conditions describes the minimum conditions needed for successful implementation, including resources, mindsets, staffing, and the like. Steps to Implement presents a concise checklist of action items, which are explained in detail in How to Implement this Practice, below.

Enabling Conditions

Prerequisites	• A student information system provides all staff access to data related to student success, such as student grades, mastery of standards, attendance, or assessment scores. Data can be disaggregated by student subgroups (e.g., multilingual learners, students in intervention, students with disabilities, students of color). • Educators know, understand, and are able to implement strategies for differentiating instruction. • Educators believe that teachers need to meet students where they are, even if that means re-teaching material or changing how they teach altogether.
Recommended Materials	• Assessment and progress monitoring measures of student performance (e.g., exit tickets, formative and summative assessments, work completion rates) • Data dashboard tool for data disaggregation • Intervention strategies and associated instructional resources • Routine data protocol for analysis and planning
Recommended Staff Commitment and Tme Allocation	• Regular time for educators to analyze data and plan interventions – 1 hour weekly or biweekly during a professional development block or other regularly scheduled meeting time • A data lead to create, iterate upon, and maintain the data tool – 40 hours for initial creation and iteration – 3 hours monthly for maintenance • Time for a professional development team to design and lead professional development on the use of the dashboard and how to effectively design appropriate interventions for students in response to data in the dashboard – 1 hour biweekly leading professional development time for educators to analyze data and plan interventions – 1–2 hours prior to the school year starting for initial training – 10–20 hours for development of training materials before the roll-out of the tool

Steps to Implement

At the start of each school year, **school leadership** take the following steps:

PREPARE NEEDED STRUCTURES

- [ ] Determine school-level goals for student success
- [ ] Set up data dashboard
- [ ] Design protocols for routine data cycles
- [ ] Design routines and norms for using data

TRAIN TEAMS

- [ ] Design and integrate staff data routines and norms

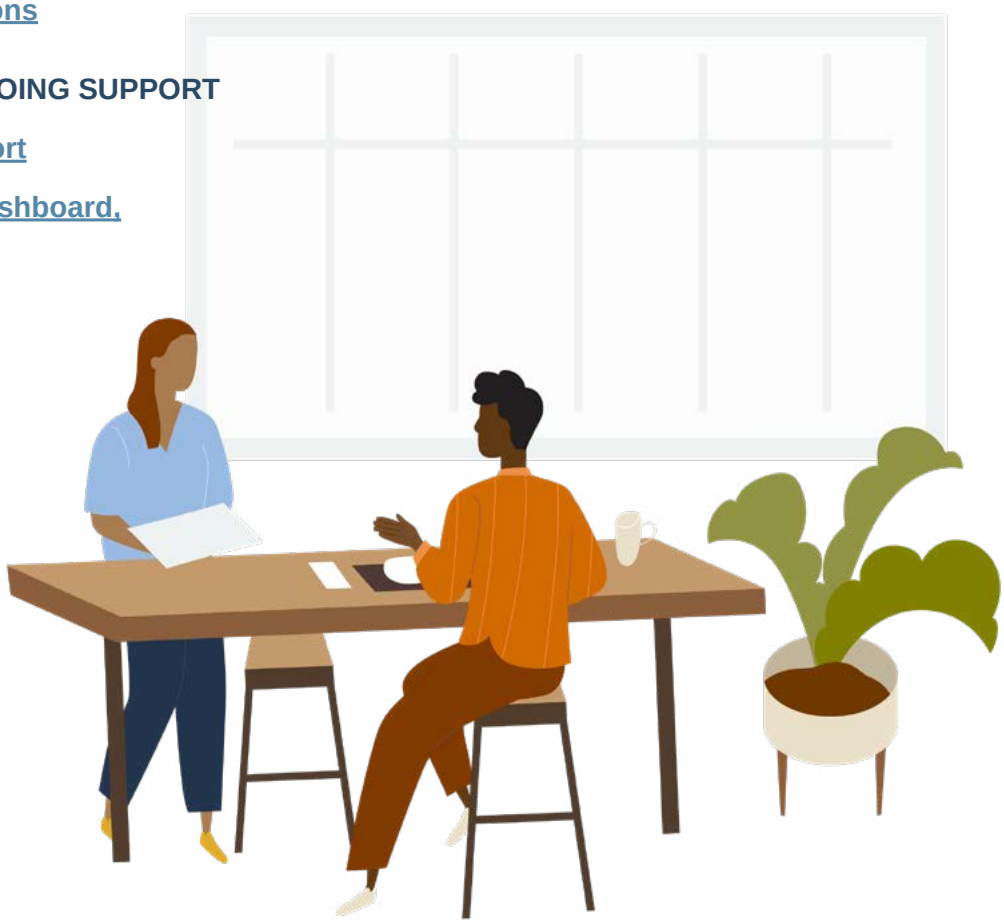
Throughout each school year, **school leadership and their teams** take the following steps:

IMPLEMENT ROUTINE DATA CYCLES

- [ ] Analyze data to identify student needs
- [ ] Plan and design interventions
- [ ] Implement interventions

PHASE IV: PROVIDE ONGOING SUPPORT

- [ ] Embed teacher support
- [ ] Revise goals, data dashboard, protocols, and norms





Bringing this Practice to Life

IMPLEMENTING ROUTINE DATA CYCLES TO RAPIDLY ADDRESS STUDENT NEEDS AT STEM PREP

STEM Prep, a college preparatory public charter school network in Los Angeles, CA, was seeking to empower teachers with the data tools teachers needed to regularly support students with personalized interventions. After introducing a gradebook distribution tool and corresponding professional development, math teachers at STEM Prep's Crown Preparatory Academy (CPA) doubled the percentage of students with disabilities with As and Bs in their classes. Their journey is described below.

STEM Prep's Gradebook Distribution Tool



The principal and staff at Crown Prep Academy, STEM Prep's 5–8 school in Los Angeles, noticed a challenge: the end-of-semester rush to support students in completing classwork and reassessments was primarily focused on raising grades, rather than ensuring mastery of content.

The principal and staff decided to create a system of progress monitoring using grades from classes. They hypothesized that a custom data dashboard would help teachers analyze student grades throughout the grading period so that they could regularly respond to individual student needs, and ensure early, targeted intervention to improve mastery of important skills and content. Early intervention, they thought, would lead to greater mastery and higher student grades, especially for students with disabilities.

Continuous Improvement Cycles

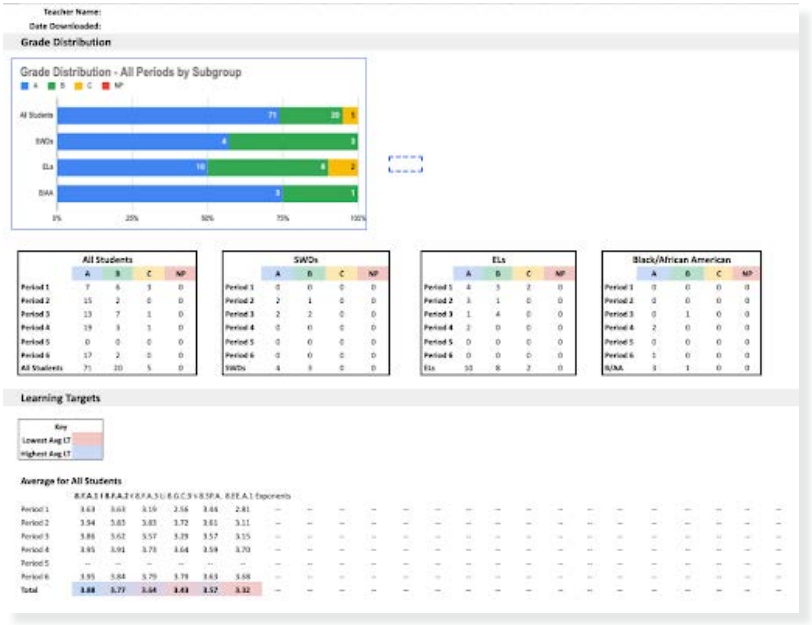


To start, STEM Prep leaders developed a gradebook tool for adoption across the teaching staff. The tool allowed teachers to frequently monitor student progress toward learning goals throughout the semester and provide personalized interventions to support students in the moment, rather than all at once, at the end of a term.

To pull data into the gradebook tool, teachers download a report from PowerSchool, STEM Prep's student information system, containing student letter grades on classwork. The report feeds into a spreadsheet that groups students by grades, learning goals, grade reporting periods, and subgroup, such as students with disabilities or multilingual learners. A dashboard overview for teachers highlights how grades are distributed overall and how students are performing on average against specific learning targets. The overview color-codes students with As, Bs, Cs, and non-passing grades.

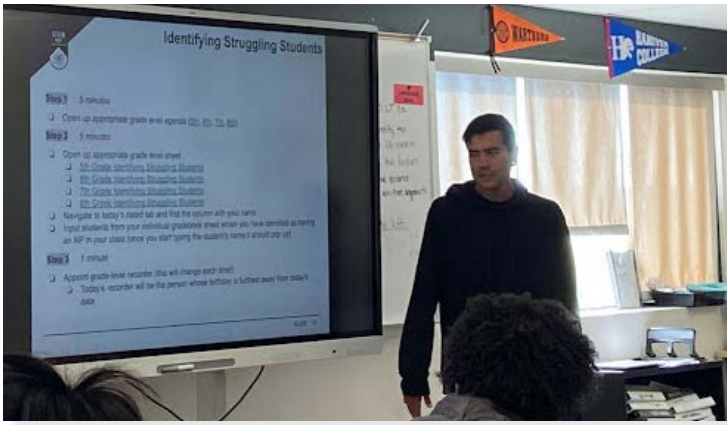
Using the gradebook tool, teachers can easily identify the students who are at risk of not passing classes, quickly create short-term SMART goals focused on mastery of content, and immediately develop an action plan based on each student's needs. For example, teachers can use this information to determine small-group workshops or invite students to join after-school tutoring.

The magic of the process is in how often teachers use the tool. When teachers use the gradebook tool at scheduled intervals, they can see if previously identified students have met their SMART goals, or whether different action plans are necessary. This approach allows teachers to see and celebrate progress with students on rapid cycles: students do not have to wait months to see whether their hard work is paying off, and teachers can replicate the instructional practices and interventions that yielded the greatest gains for students.



In 2021–22, Crown Prep saw substantial growth, especially for students with disabilities, when teachers reviewed data at least monthly.

A Culture of Learning



When first implemented, the dashboard struggled to gain traction. The gradebook tool was presented as a system teachers would use, yet teachers didn't fully understand why it was needed. Teachers said that the tool was difficult to understand and navigate. Subsequently, adoption was poor, and the leaders needed to rethink the rollout of the gradebook tool.

Approaching with a culture of continuous improvement, the Crown Prep leadership team adapted their approach rather than scrapping it. School leadership used feedback from teachers to improve the tool and created professional development to build staff buy-in. To explain the purpose of the tool, Crown Prep used a thermometer and thermostat mental model: PowerSchool, they explained, is the thermometer that shows the current temperature of student performance. The tool is the thermostat, enabling teachers to change that temperature through focused action.

The mental model landed well with teachers, who were able to connect the effort to Crown Prep's goals for student performance. According to Kate, an assistant principal at Crown Prep, "Being transparent and explicit about our school-wide goals helped teachers to see the bigger picture and empowered teachers to create more targeted and clear goals for their subgroups."

With teacher buy-in on track, Kate reviewed the initial action plans. She found that they were primarily student-centered (i.e., "the student needs to …") rather than teacher-centered (i.e., "I will … for the student."). Again, the leadership team adjusted based on what they had learned. School leaders created a **tool to develop action plans** with each data pull. This tool provided guiding questions to focus the teacher's attention on who is struggling, what they're struggling with, and what actions the teacher would take to support the student.

To further support the use of data-driven instruction, scheduled data pulls and discussions were built into the monthly professional development calendar, which proved essential to the success of the effort. Teachers shared their goals for students with their coaches and administrators to inform professional development and coaching sessions. In return, teachers got feedback on their approach and progress. Coaches could also use the data to ask guiding questions to reinforce the protocol such as, "How can I help you action-plan?" Repetition made the practice routine.

Having coaches support the development of interventions for students was a key way for Crown Prep to build teacher capacity. Coaches suggested new interventions when prior interventions were not successful. Coaches also guided teachers to reflect on why their initial attempts at instruction were unsuccessful for particular students. This capacity building particularly benefited students with disabilities who regularly need differentiated instruction and accommodations to meet their IEP goals.

Further success came when teachers began downloading data on their own, between monthly professional development sessions, and independently sought opportunities to plan and take action using their data.

Making the Grade

As the tool was adopted, Crown Prep began seeing a gradual increase in the percentage of students with disabilities achieving As and Bs in their classes, and a similar decrease in the percentage of students with disabilities not passing their classes. Among the 30 students with disabilities served, the percentage of A and B grades increased from 25%, when continuous improvement efforts began, to 81% in the Fall of 2022.

By focusing on students placed furthest from opportunity, Crown Prep also saw improvement in the experience of all students. Among students at Crown Prep who do not have disabilities, A and B grades improved from 49% to 77%.

Carrying it Forward

After implementing the tool at Crown Prep, STEM Prep decided to begin using it at their high school, Math & Science College Prep (MSCP). MSCP conducted professional development with their staff in September and ran a follow-up professional development in October, to ensure teachers knew how to use the tool to analyze data and make corresponding intervention plans.

By the end of the first semester, MSCP teachers reflected that they struggled to download their data to input into the tool outside of monthly meetings, and thus were more often going back to their student information system instead of the dashboard. As a result, MSCP's leadership decided to integrate more explicit time for teachers to download data during weekly professional development in an effort to make the use of the dashboard more regular. MSCP continues to iterate on their process and find strategies to ensure that routine data cycles can occur more frequently and consistently for teachers.

Creating an Effective Data Tool

For STEM Prep, the gradebook distribution tool was ultimately successful because it ensured student data was:

- **aligned** to their organizational priority to improve student passing rates;
- **regularly collected,** reviewed in monthly meetings, and embedded into their broader schedule and collaboration methods;
- **actionable** through a customized tool that allowed teachers to review and act upon data to improve student mastery; and
- **disaggregated at the student level,** ensuring teachers could look at the classroom, subgroup, and individual student data.

How to Implement this Practice

This section provides step-by-step guidance for implementing routine data cycles to guide student supports, along with accompanying resources to get started. The steps are organized into four phases for implementation: Prepare Needed Structures, Train Teams, Implement Routine Data Cycles, and Provide Ongoing Support.

Prepare Needed Structures

Step 1: Determine School-Level Goals for Student Success

Data-driven instruction systems can fail to be adopted by teams when the systems are not deeply aligned to a school's mission and current student needs. Base goals on existing data and past trends so that the goals are realistic and, more importantly, based on specific needs for priority subgroups. Use historical data to create a baseline for the goals prior to beginning interventions in order to measure the effectiveness of the practice. Goals need to be measured regularly and with fidelity over time.

For example, a school might explore their baseline data and learn that only 13% of students with disabilities are on grade level in reading based on NWEA MAP. They could set a goal of improving to 25% by the end of the year, with benchmarks of growth at three percentage points per quarter. Then, they set up the data tool to collect measures that can show growth on a regular basis throughout the year so all educators know if they are on track to meet the goal.

Step 2: Set Up Data Dashboard

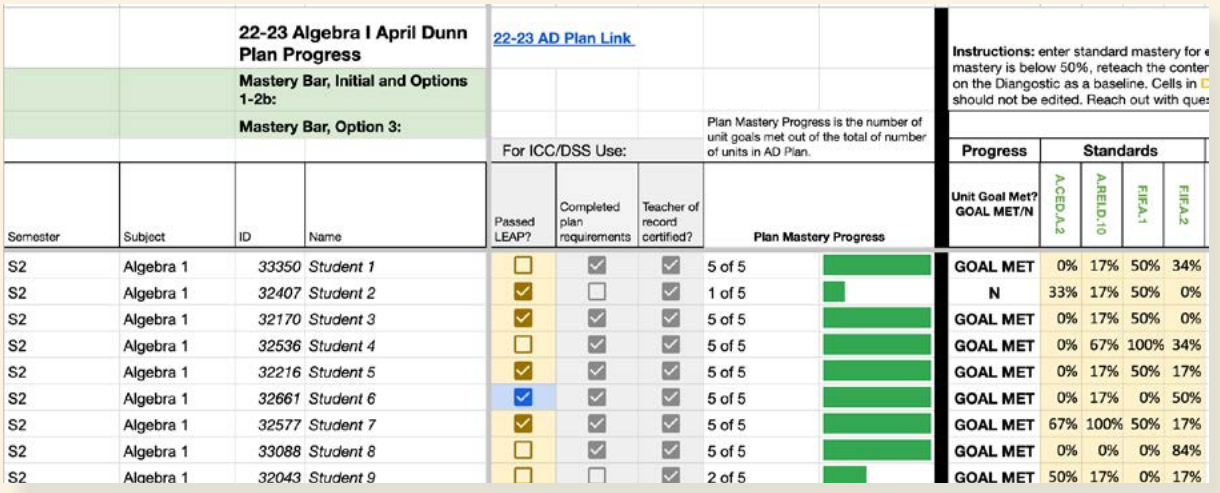
If an existing student information system does not provide educators with easy access to specific, disaggregated data aligned to a school's goals, school leadership will need to develop a data dashboard for teacher use. (See *Navigating Data for Multi-Tiered Systems of Support Overview* for more information on creating data dashboards.) Using school-wide goals, determine which classroom-level data points best measure the goals to be used in the dashboard. These measures need to be relatively easy for teachers to collect with fidelity and consistency. Examples of data include:

- **engagement measures:** attendance, assignment completion;
- **formative assessments:** exit tickets, checkpoints, independent practice; or
- **summative assessments:** project grades, course grades, unit tests.

Once the dashboard is established, test it for usability by teachers. Will teachers be able to easily disaggregate data at many different population levels, including class periods and subgroups? Can they easily refresh data or upload new data? These factors will help set the dashboard up for successful use.

School Spotlight

Collegiate Academies uses an SIS that is intended to make it easier for educators to analyze student data for a variety of purposes. Unfortunately, school leadership quickly learned that the SIS did not allow teachers to view student mastery of standards by the types of filters (e.g., grade levels, class periods, and subgroups) they desired. Collegiate's leaders opted to create their own tool, one that would allow teachers to more easily filter by group to see how students were progressing on each standard and to devise plans for how to teach and re-teach skills. The image below shows their tracker for assessing students' level of mastery through alternative means of assessment (i.e., network interim assessments in place of state standardized assessments).



22-23 Algebra I April Dunn Plan Progress

22-23 AD Plan Link

Mastery Bar, Initial and Options 1-2b:

Mastery Bar, Option 3:

Instructions: enter standard mastery for e mastery is below 50%, reteach the conter on the Diangostic as a baseline. Cells in should not be edited. Reach out with que

For ICC/DSS Use:

Plan Mastery Progress is the number of unit goals met out of the total of number of units in AD Plan.

Semester	Subject	ID	Name	Passed LEAP?	Completed plan requirements	Teacher of record certified?	Plan Mastery Progress	Progress: Unit Goal Met? GOAL MET/N	Standards: A.CED.A.2	A.REI.D.10	F.IF.A.1	F.IF.A.2
S2	Algebra 1	33350	Student 1	☐	☑	☑	5 of 5	GOAL MET	0%	17%	50%	34%
S2	Algebra 1	32407	Student 2	☑	☐	☑	1 of 5	N	33%	17%	50%	0%
S2	Algebra 1	32170	Student 3	☑	☑	☑	5 of 5	GOAL MET	0%	17%	50%	0%
S2	Algebra 1	32536	Student 4	☐	☑	☑	5 of 5	GOAL MET	0%	67%	100%	34%
S2	Algebra 1	32216	Student 5	☑	☑	☑	5 of 5	GOAL MET	0%	17%	50%	17%
S2	Algebra 1	32661	Student 6	☑	☑	☑	5 of 5	GOAL MET	0%	17%	0%	50%
S2	Algebra 1	32577	Student 7	☑	☑	☑	5 of 5	GOAL MET	67%	100%	50%	17%
S2	Algebra 1	33088	Student 8	☐	☑	☑	5 of 5	GOAL MET	0%	0%	0%	84%
S2	Algebra 1	32043	Student 9	☐	☐	☑	2 of 5	GOAL MET	50%	17%	0%	17%

Step 3: Design Protocols

A protocol provides directions for each step in a process, as well as the order in which steps should be completed, so that different users of the protocol are all doing the same thing to complete the activity. When using data for instructional support, it is important to use a protocol to help guide educators through the data review, data analysis, and instructional planning process in a systematic way that is standardized across teams.

Design the protocol to encourage teachers not only to look at their overall student trends, but also to focus on individual students or small groups of students (e.g., students with disabilities), paying particular attention to students who have not met learning expectations across several periods of time.

The protocol should then lead teachers to devise interventions to support students based on needs identified in the data. In subsequent iterations of the protocol, teachers should begin by reflecting on

whether the prior cycles of data-driven decision-making had the desired effects on student outcomes.

STEM Prep's protocol for reviewing data focuses heavily on teachers creating goals for students who are falling behind in classes. Educators also make action plans to support students in achieving those goals before too much time has passed. The protocol is an essential tool for educators to know how to draw meaning from the data tool and how to use it effectively to create individualized supports for students.



Step 4: Design Routines and Norms for Using Data

DATA ENTRY AND USE OF THE TOOL

Effective use of a data tool to design instructional supports for students relies on the timely — often real-time — entry of data into the defined data systems. In addition, it's important to systematize data collection and calibrate the quality of data collected in order to establish expectations and create accountability for aligned, ongoing use of data for this purpose.

STEM Prep, for example, requires teachers at their high school, Math and Science College Prep, to have all assignment scores updated every Wednesday. This norm allows teachers to pull and input data into their dashboards for analysis during weekly professional development time. Without this clear expectation for regular data entry from school leadership, teachers might have incomplete data during collaboration sessions and may not be able to use the dashboard effectively for planning with colleagues.

Data dashboards that draw from an external database, such as a student information system, may require manual downloads to populate the custom dashboard with up-to-date data. Some schools ask teachers to do this themselves, and others do it within their central office. Consider the technical abilities and capacity of educators when making this choice.

Special consideration should also be given to how data is updated in student information systems. For example, if teachers are expected to input grades by 5:00 p.m. on Fridays, the data system should refresh grade data on Friday nights. These decisions should be made based on teacher input. If these systems are not created in a manner that works for teachers, long-term buy-in for the systems may suffer.

IMPLEMENTATION AND PROTOCOL USE

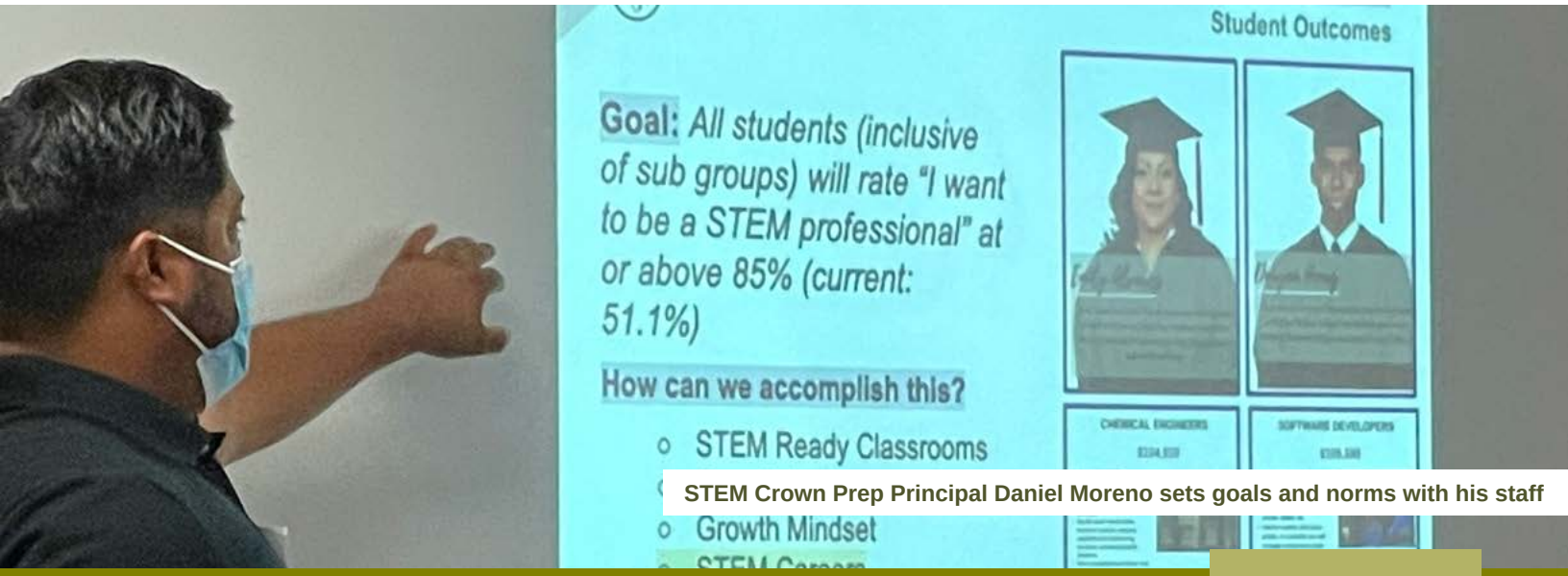
School leadership should also attend to the norms for how teams will use the protocol for analyzing data and designing interventions.

It is important for leadership to consider the multitude of priorities schools are faced with to decide whether teams can meet for this purpose weekly or biweekly. The key to successful implementation of this practice is for teachers to review data frequently enough so they can respond and support students who are struggling in areas of concern, and early enough that interventions can have a beneficial effect.

To make this practice routine in implementation, school leaders and coaches will also need to define the space, time, and teams in which data cycles take place, regardless of their cadence. One component of that environment will be the availability of a staff member to lead the team, whether that be an administrator, coach, or existing team lead. Grade-level teams that meet independently of school-wide professional development may be able to use those meetings as an opportunity to use the dashboard and protocol regularly. Some teams will be able to use common prep periods to schedule this work. In many cases, school leaders will need to use school-wide professional development time to divide into teams for an hour to analyze data and plan interventions.

Create Norms that are Right for the School's Context

For data input to occur reliably, school leaders need either to create a process for how input will be done for teachers or to make time on a weekly basis for data input by teachers. For example, to lessen the burden on teachers, **Collegiate Academies** initially decided that their data team would enter all data into the dashboard. However, teachers immediately saw the benefit of the dashboard, and soon began entering data themselves in order to make more frequent use of the tool. Conversely, STEM Prep had teachers vinput the data into their dashboard, but teachers struggled to do so outside of the monthly professional development time that had been set aside for this purpose. STEM Prep's team determined it was essential to set aside time for inputting data on routine cycles as part of their process. It is important to make these types of decisions based on the specific school context and its teachers' needs.



STEM Crown Prep Principal Daniel Moreno sets goals and norms with his staff

Train Teams

Step 5: Design and Integrate Staff Data Routines and Norms

It is important to devote time during summer professional development to introduce the purpose of routine data cycles, as well as train teachers on the school's goals, data collection and quality norms, use of the data dashboard tools, and use of the protocols to analyze data and design interventions. Training should also ensure that teachers know how to complete any technical steps, such as downloading data into the dashboard (if necessary), using the dashboard's functions effectively, and following the protocol for viewing, analyzing, and acting upon data.

A helpful how-to guide, such as this model from STEM Prep, can serve teachers as a reference for directions on how to download and use the data in the future. Follow-up professional development may be needed to provide additional support to teachers who struggle to use the dashboard and its functions.

School Spotlight

Collegiate Academies used a staged rollout to implement their standards tracker. The team mocked up its standards tracker in the fall of 2021. In January 2022, and throughout the spring, they launched the tracker for pilot testing with a select group of assistant principals and staff members. The launch group began fully using the tool in the last quarter of the school year. This timing set up Collegiate's leaders to train launch group members in May, which resulted in a smoother training of the broader staff and new hires the following fall.

The new beginning-of-the-year training used simulated data to teach educators how to populate the tracker and use it effectively. Leaders found that this training made it easier to set the expectations for the use of the tracker before the start of the new school year. At every stage, regular professional development sessions made it possible for teachers to give feedback within the tracker so further alterations could be made to the tool.

Collegiate Academies' future training will enable more school leaders or coaches to make edits and create functionalities in the tool without needing the technical assistance of the original developer.



Staff at Collegiate Academies engage in start of year training

Implement Routine Data Cycles

Once staff are trained, launch the protocol to implement data cycles on a routine cadence — ideally every two weeks, if not weekly. Each iteration of the cycle consists of three key steps: (1) analyze data, (2) design interventions, and (3) implement interventions.

See the Sample Data Cycle Protocol with Guiding Questions for steps teachers might take to analyze data and develop action plans based on that analysis. A fillable version of the data protocol template is available in the Appendix.

Sample Data Cycle Protocol with Guiding Questions

Schoolwide Goals	**[Insert site-wide area of focus or goal for student outcome growth]** *Example: Demonstrate three percentage point growth per quarter to reach 25% of students with disabilities on grade level in reading based on NWEA MAP.*
Steps to Gather and Review Data	
Confirm data is up-to-date.	• *When was the last time grades were entered?* • *Do the grades in the data represent mastery?* • *Are students turning in assignments?* • *Are there any other problems you see in the data that need to be fixed?*

Steps to Analyze Data	
Identify student strengths in the data.	• *What assignments or standards are students finding it easiest to master?* – *Note what was happening in class that might have been different for these assignments or standards.* • *Are there areas where almost all students are seeing success?* – *Which students are not seeing success in these places?*
Identify areas of challenge for students in the data.	• *What assignments or standards are students finding it most challenging to master?* – *Note what was happening in class that might have been different for these areas.* – *Which students had the greatest challenges in these areas?* – *Which students did not find these areas to be a challenge?* • *Are there areas where almost all students are facing challenges?* – *Which students are not seeing challenges in these places?*
Identify priority focus areas.	• *What specific areas or standards do you need to address?* • *There can be multiple focus areas regardless of how many students need each one to be addressed.*
Create a SMART goal that will move the needle for students.	*Based on what I'm seeing in the data, my goal is to (do X in order to support students with Y)* *Example: By 11/29 (the next grade check) 25% of students will increase mastery to a C or better.*

Steps to Action Plan			
Identify students who need support by focus area.	*Which students do you need to provide additional support to reach your SMART goal?*		
	Focus Area 1 •	*Focus Area 2* •	*Focus Area 3* •
Action Steps	*Focus Area 1* • Who: • What: • When:	*Focus Area 2* • Who: • What: • When:	*Focus Area 3* • Who: • What: • When:

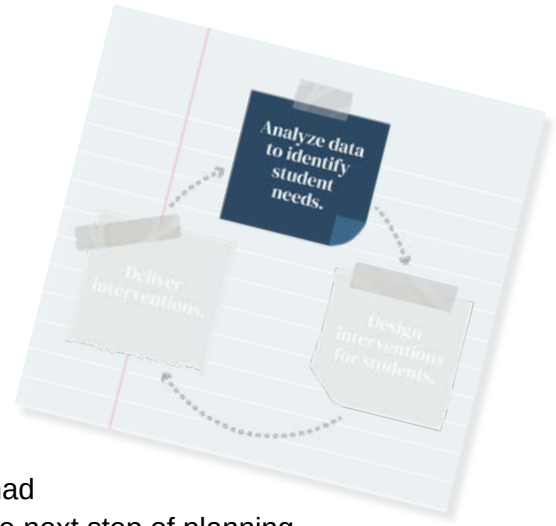
Steps for Focusing on Target Population			
Identify subgroups who need support by focus area.	*Which student subgroup(s) in your class do you need to provide additional support for each identified focus area of need?*		
Identify students who need support by focus area.	*Which students do you need to provide additional support to reach your SMART goal?*		
	Focus Area 1 •	*Focus Area 2* •	*Focus Area 3* •
Action Steps	*Focus Area 1* • Who: • What: • When:	*Focus Area 2* • Who: • What: • When:	*Focus Area 3* • Who: • What: • When:

Coaching Support	
Identify teacher needs.	• *What help might you, as a teacher, need to implement action steps?* • *Do you need to engage any other specialists (e.g., special educators, literacy specialists, administrators, multilingual learner specialist)?*

Examples of Action Steps

- *I will invite the following students to tutoring for the next three weeks to work on Learning Target 1, 3, and 5.*
- *I will implement small group instruction in my next lesson cycle to focus on the needs of the target population.*
- *I will spiral in long-division in the next unit assessment, as 80% of students have made errors connected to this skill.*

Step 6: Analyze Data to Identify Student Needs

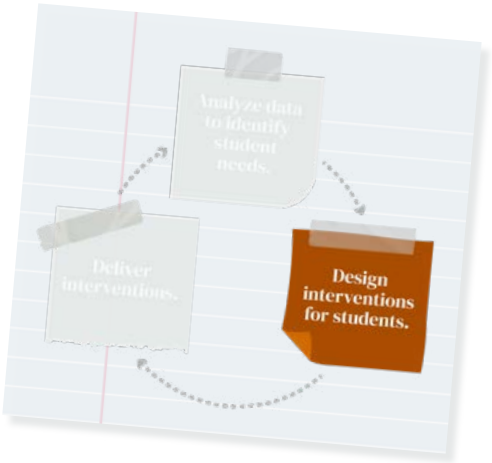


The purpose of analysis is to identify groups of students with common needs, or individual students with specific needs, that can be addressed through interventions in future classes. In this step, teachers look for commonalities among students, assignments, and event dates to better understand why some students mastered content and others did not.

It is often helpful to start by looking at the class as a whole and noticing any data points that stand out. Use these outliers in the data to guide further analysis. Consider which students may have had procedural challenges versus conceptual challenges to help with the next step of planning interventions. Sometimes it will be necessary to analyze students' work in order to better understand what they struggle with on an assignment (see ***A Collaborative Approach to Student Work Analysis*** to learn more).

For example, imagine a class that averaged 80–90% on exit tickets in the last two weeks. Suddenly, over the course of a few days, the average drops closer to 60%. This decrease is a sign that the teacher should look carefully at those days to understand what happened. Similarly, they might look at data for subgroups — students with disabilities, multilingual learners, students living in poverty, etc. — to see whether these subgroups mastered the content at the same level as other students in class or whether some assignments arise as concerns. Those outliers in the data tell the teacher to investigate which students struggled the most with the content and to reflect on their own instructional practices on those days.

Step 7: Plan and Design Interventions



Once teachers have students grouped by needs based on their analysis of the data, they plan interventions aligned to the different focus areas. Planning by focus area ensures that students learn missing skills, correct misconceptions from prior lessons, or master content to help them better access the next lesson. Interventions can take many forms, but in every case should be designed based on what was learned through the data analysis.

For example, teachers might determine from the data that they should:

- design a small group session during the Do-Now,
- spiral in prior concepts for the whole class to practice,
- provide 1:1 support to help build essential foundational concepts, or
- coordinate with a special educator to plan a lesson.

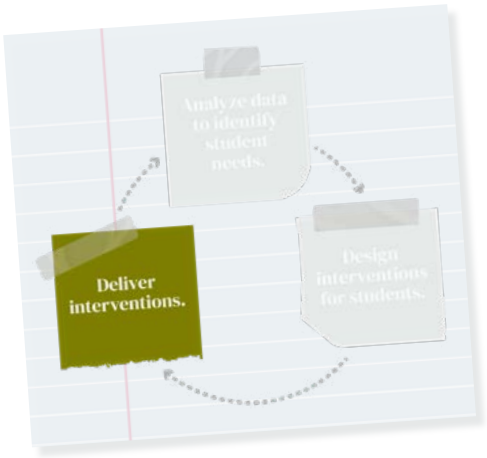
School-level teams should develop a **bank of interventions** that can serve as a living reference for all teachers and teams as they plan interventions that best meet student and classroom needs.

How the NIC Used Data to Make Instructional Decisions

Schools in the NIC have used data tracking and analysis in different ways. At **Collegiate Academies,** teachers use Collegiate's custom-made April Dunn Tracker to understand which standards students have mastered at different levels over time. The tracker makes it easy for co-teachers to determine which students in their class need re-teaching of content or skills related to a standard, to design lessons so re-teaching can occur, and to reassess student mastery of the standard.

At **Green Dot Public Schools,** teachers have used data from work analyses to guide interventions. For example, a co-teaching pair, after introducing a new concept in class and analyzing students' exit tickets, realized that their students had a wide range of needs. Subsequently, they designed mixed-ability groupings to allow students to learn from one another more easily and to help their peers starting with varying amounts of prior knowledge. Using mixed-ability groupings allowed the co-teachers to work more closely with individual students or groups that needed additional guidance.

Step 8: Implement Interventions



The most important part of the routine data cycle is implementation of the planned interventions for students. Structures like collaborative planning can help teachers design and implement interventions with teaching teams (see *Establishing Effective Data Routines in School-Based Teams*). Teachers can also work with coaches to find new resources and improve intervention planning and implementation across data cycles.

The following actions and considerations may be helpful for the successful implementation of instructional interventions:

- Teachers develop classroom norms and routines to make implementing interventions possible.
- Teachers plan a new lesson format or activity to re-teach content to reach a group of students.
- Coaches conduct observations to provide feedback to teachers to support their growth and development implementing data-driven interventions.
- Teachers complete peer observations to access models and examples of interventions in practice.
- Coaches work with teachers to determine areas of growth in implementing interventions.
- Coaches schedule short periods of time with teachers when interventions will happen so that coaches can maximize how many teachers they observe in a day.

Once the interventions are implemented, a data cycle is complete. Teachers will begin the next iteration of the cycle by analyzing data to determine the effectiveness of their prior data-based decisions and subsequent implementation of interventions.

Provide Ongoing Support

Step 9: Embed Teacher Support

It is important to plan structures and routines for coaching and collaboration that will support and sustain this practice as a regular activity across school teams. Consider how your school will embed ongoing support into regular teacher planning, collaboration, support, and professional development structures. Some examples of embedded structures to support data cycles include the following:

- Dedicated weekly grade-level team meetings (see ***Establishing Effective Data Routines in School-Based Teams***)
- Co-planning time that allows teachers to work alongside other educators to use the protocols to review, analyze, and plan based on student data (see ***Co-Planning for Differentiated Instruction***)
- More frequent data reviews for teachers to determine whether daily routines or supports are needed and to measure how effective those supports are for students, particularly if a class or set of students continues to struggle during a unit
- Biweekly instructional coaching to help teachers or co-teaching teams troubleshoot any technical issues, as well as to help them build their skills around analyzing student data, identifying which students need additional support, designing the type of interventions that will best help students achieve mastery of the content, and implementing those interventions

School Spotlight

Collegiate Academies uses biweekly coaching sessions as an opportunity to review data with teachers and create action plans. These sessions can also be an opportunity to plan more intensive and long-term support that may require additional staff, space, or time. **STEM Prep** primarily uses grade-level meetings to review data and determine additional support for students.

After the initial implementation of the data dashboard and protocol, differentiate subsequent professional development sessions so returning teachers can learn new intervention strategies, while new teachers learn the mechanics of using the tool. Veteran and new teachers should be paired at different points so newer teachers can build their knowledge of intervention strategies from their peers. The implementation of interventions is the most important and difficult step of the process and cannot be overlooked. Coaching and professional development should continuously include new strategies teachers can use and explain when to use them based on data.

Timing is important!

When school leaders plan for the implementation of this practice before the start of the school year, instructional staff can be oriented to the tools and prepared to start the school year strong. Both **STEM Prep** and **Collegiate Academies** integrate training into their summer professional development so they can onboard new teachers and school leaders to the dashboard. Early training should be followed-up regularly through coaching conversations, grade-level and department meetings, and co-planning sessions. **Summit Atlas** focused professional development on this type of content mid-year when they saw teachers needed additional guidance on how to choose interventions for their students. STEM Prep, Collegiate Academies, and Summit Atlas all identified a need to conduct further training with teachers around interventions to implement with students.

Step 10: Revise Goals, Data Dashboard, Protocols, and Norms

It will be necessary to regularly revise the data system to improve effectiveness as teachers use the data system and school leaders observe the impact the practice is having on student learning. As student learning outcomes improve, changes to school-wide goals may also be necessary. Find opportunities for teachers to share feedback on how to improve the tools and protocols as they become more familiar with using the data dashboard and protocols.

In the first year of implementing the data system, school leaders may prefer rapid revisions, perhaps quarterly or even more frequently. Revisions may only be needed on an annual basis once regular progress is observed in the dashboard and start-of-year goals are met.

School Spotlight

The successful development of any new tool or protocol requires its own cycles of improvement. Both **STEM Prep** and **Collegiate Academies** spent a semester getting feedback from users at regular intervals through surveys and interviews, which helped their development teams troubleshoot issues and improve inefficiencies. For example, Collegiate Academies learned that many teachers did not know how to create their own filters in Google Sheets. As a result, the team created filters ahead of time for teachers and designed training to increase current and future staff capacity to use Google Sheets independently. They no longer took for granted that teachers could learn how to use the necessary features of Google Sheets on their own.

Practice Snapshot

COLLEGIATE ACADEMIES' APRIL DUNN STANDARDS TRACKER

In collaboration with the Networked Improvement Community, Collegiate Academies in New Orleans developed a data system tailored to track progress toward graduation requirements of diverse learners. Initially prototyped and tested in collaboration with classroom and school leaders, the data tracker tool and the systems designed for its use have been scaled across all campuses.

In 2014, Louisiana's Legislature passed Act 833, giving students with disabilities an alternative method of achieving high school graduation requirements. Specifically, the change meant that students with disabilities were no longer required to pass a Louisiana statewide assessment, known as the LEAP. Instead, new "April Dunn Act" requirements offered another way for students to demonstrate mastery of standards. For some eligible students, IEP teams are able to specify that students will graduate through the mastery of state standards using alternative means other than passing end-of-course LEAP assessments. The IEP teams are required to document the achievement of the standards and fulfillment of requirements for high school graduation.

Collegiate Academies, like all schools in Louisiana, had to adopt and adapt to April Dunn requirements for a subset of their students with disabilities. A key practice Collegiate developed to meet the needs around April Dunn requirements was data-driven decision-making. Collegiate created a standards tracker that allowed teachers to document and see which April Dunn statewide standards each student met and how. Collegiate used their existing tracker for general education statewide standards as a model for their April Dunn tracker. Originally separate, the two trackers were eventually combined into one tool for all teachers to access.

The April Dunn tracker was particularly important to Collegiate's goals for co-teaching. All students with April Dunn standards included in their IEP had a plan for graduation, including taking at least math and English in co-taught classes. Using a tracker allowed Collegiate's co-teachers to effectively support these students to meet their individual IEP goals and master the standards to graduate.

At the beginning of the 2022–23 school year, after Collegiate had completed prototyping and testing of the tracker tool with a subset of teachers, they began training all teachers on the use of the tool. Using a fake data set, Collegiate leaders taught educators how to download data and use the tracker. They found that it was easier to set expectations for the use of the tracker generally, and for its use in co-planning, when launched at the beginning of the school year rather than mid-year. Additionally, through the beginning-of-the-year roll-out, Collegiate's leaders were able to train more school leaders to independently edit and create functionalities in the tracker.

By training both teachers and school leaders, Collegiate created a long-term, sustainable system for tracking, reviewing, and making instructional decisions for all learners, especially those in our priority population.

Summary

Systematically reviewing, analyzing, and planning instruction based on specific, disaggregated student data is essential in responsive instruction, particularly for addressing the unique needs of priority populations such as students with disabilities. The success of this practice relies not only on developing high-quality materials for data analysis and disaggregation but also on integrating them effectively into the school's culture, staff training, and teaching practices. Thoughtful design of systems that enable frequent data use, particularly when disaggregated by priority populations, ensures informed instructional decisions, targeted interventions, and the identification and mitigation of biases in the educational system.

School leaders can ensure educators focus on the needs of students with disabilities by allocating regular time and defining clear protocols to identify student performance trends and to review disaggregated group and individual student data in light of those trends. Further, associated professional development, particularly in the summer, sets educators up to successfully use data to design interventions during lesson planning.

FURTHER LEARNING

"The practice of data use: An introduction"

CYNTHIA E. COBURN AND ERICA O. TURNER
AMERICAN JOURNAL OF EDUCATION

"Mathematics Performance Assessment in the Classroom: Effects of Teacher Planning and Student Problem Solving"

LYNN S. FUCHS, DOUGLAS FUCHS, KATHY KARNS, CAROL L. HAMLETT, AND MICHELLE KATZAROFF
AMERICAN EDUCATIONAL RESEARCH JOURNAL

Visible learning: A synthesis of over 800 meta-analyses relating to achievement

JOHN HATTIE

Foundations for Success: Case Studies of How Urban School Systems Improve Student Achievement

JASON SNIPES, FRED DOOLITTLE, AND CORINNE HERLIHY
FOR THE COUNCIL OF THE GREAT CITY SCHOOLS

IMPLEMENTING ROUTINE DATA CYCLES TO RAPIDLY ADDRESS STUDENT NEEDS

Appendix

Appendix

How to Measure

When implementing routine data cycles, monitoring how useful, usable, and utilized the practice is by team members and across the school system can accelerate learning to improve outcomes for students. Be aware that improved process measures are usually necessary to ensure a high enough level of fidelity before outcomes will see improvement. At minimum, these measures are most essential:

PRIMARY MEASURES					
Measure Type	**Data Collection Type**	**Question Asked**	**Results**	**What does success look like?**	**Examples and Notes**
Process	Coaching notes Observation Survey	Are teachers using student data when planning? Yes / No	Percent of teachers who look at student data	Increasing percent over time until reaching 100%	Consider using professional development and coaching session agendas to document.
Process	Coaching notes	Are teachers planning targeted interventions for students based on data? Yes / No	Percent of teachers designing interventions based on data	Increasing percent over time until reaching 100%	
Process	Observation	Are teachers implementing targeted interventions for students? Yes / No	Percent of teachers implementing supports to specific students	Increasing percent over time until reaching 100%	If teachers can be observed frequently, this measure can look at the average rate of teachers implementing supports, using multiple observations per teacher.
Outcome	Student information system	Are students completing more assignments? Yes / No	Percent of assignments completed in a given time period	Increasing percent over time until reaching 100%	Consider looking at assignments completed at mastery levels once you have started to see more overall completion.
Outcome	Student information system	Are students completing assignments proficiently? Yes / No	Percent of assignments completed proficiently	Increasing percent over time until reaching 100% completion rate with proficiency	Ensure that you have an existing cut point for mastery (e.g., 80% correct, 3 out of 5 points).

Additional measures can guide a team to know whether the routine data protocol is leading to the desired improvements for students:

SECONDARY MEASURES					
Measure Type	**Data Collection Type**	**Question Asked**	**Results**	**What does success look like?**	**Examples and Notes**
Process (useful)	Survey Interview Focus groups	Is the student data dashboard easy to use for planning instruction? Yes / No	Percent of teachers reporting that it is easy to use the dashboard for planning	Increasing percent over time until reaching 100% of teachers	Ask questions about the individual components of the dashboard as well as the overall usefulness so that you can isolate what does and does not meet teacher needs.
Process (usable)	Survey Interview Focus groups	Is it easy to review data for our priority populations using the dashboard? Yes / No	Percent of teachers reporting that it is easy to review data for the priority population	Increasing percent over time until reaching 100% of teachers	Prepare questions by anticipating parts of the tool that may be most difficult to use. Sit beside or screen share with users. Ask questions as they walk through the tool. Consider A/B testing to give the user another option for how something can function.

PRACTICE TOOL

Routine Data Cycle Protocol

SCHOOLWIDE GOAL(S):	
Steps to Gather and Review Data	
Confirm data is up-to-date.	

Steps to Analyze Data	
Identify student strengths in the data.	
Identify areas of challenge for students in the data.	
Identify priority focus areas.	
Create a SMART goal that will move the needle for students.	

Steps to Action Plan			
Identify students who need support by focus area.			
	Focus Area 1 •	*Focus Area 2* •	*Focus Area 3* •
Action Steps	*Focus Area 1* • Who: • What: • When:	*Focus Area 2* • Who: • What: • When:	*Focus Area 3* • Who: • What: • When:

Steps for Focusing on Target Population			
Identify subgroups who need support by focus area.			
Identify students who need support by focus area.			
	Focus Area 1 •	*Focus Area 2* •	*Focus Area 3* •
Action Steps	*Focus Area 1* • Who: • What: • When:	*Focus Area 2* • Who: • What: • When:	*Focus Area 3* • Who: • What: • When:

Coaching Support	
Identify teacher needs.	

Notes

1 Drury et al, “Educational Leaders’ Perspectives”

2 Kania and Kramer, “The Equity Imperative in Collective Impact”

Bibliography

Drury, Jodi, Michael P. Krezmien, Kristine Camacho, and Alicia Gonzales. “Educational Leaders’ Perspectives on Their Preparation, Practice, and Professional Development in Multi-Tiered Systems of Support.” *Journal of the American Academy of Special Education Professionals* (Fall 2021): 7–29.

Kania, John, and Mark Kramer. “The Equity Imperative in Collective Impact.” *Stanford Social Innovation Review* (October 2015): 1–6. https://www.doi.org/10.48558/javg-hj19