



Strengthening Math Intervention in the Middle Grades: Guide for Leaders

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Strengthening Mathematics Intervention Project

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Introduction to the Guide

This guide was developed by the *Strengthening Mathematics Intervention* project at Education Development Center (EDC), with funding from the National Science Foundation (NSF). Starting in 2016, our project has studied the ways in which schools provide support to students struggling with math in the middle grades. To find out how U.S. schools implement math intervention classes, the project conducted classroom observations, interviewed teachers and math leaders, and conducted a [national survey](#) ([Brodesky et al., 2018](#)). Building on these findings, we created professional development (PD) courses specifically for teachers of math intervention classes, helping to build their knowledge and practices for supporting students in the middle grades. We also facilitated Forums on Mathematics Intervention in the Middle Grades for district teams of administrators, math leaders, math coaches, and intervention teachers. Drawing on this intensive work, we have written two guides—this one for leaders and a second one for math teachers, coaches, and specialists—to share information, suggestions, guiding questions, and resources for implementing math intervention classes in the middle grades.

How to use this guide

This guide was designed to support math leaders in different roles and stages of implementing math intervention, whether you're just getting started or already leading an established program. It includes sections on identifying students, scheduling, class size, staffing, and other aspects of implementing math intervention classes. Please note that this guide does not include instructional practices for math intervention; that is the focus of the companion guide for teachers.

It is not necessary to go through this guide in a linear way. We encourage you to pick and choose topics to fit your needs and interests.

Overview of Math Intervention

WHAT ARE MATH INTERVENTION CLASSES?

Math intervention classes are offered **in addition to** general education math classes, with the purpose of providing focused, supplemental instruction for students struggling with math. A key element is that intervention classes provide additional support; they do not replace core math instruction.

Math intervention classes provide a powerful opportunity for students to get additional instruction in a smaller, safer setting with high levels of teacher–student interaction. In contrast to general academic support classes, which address multiple subject areas, intervention classes focus only on math. Math intervention classes are for students who struggle with math, including learners who do not have identified disabilities and those with Individualized Education Programs (IEPs). They are **not** separate special education math classes.

Math intervention is a relatively new and evolving area. Starting in the early 2000s, some districts began implementing math intervention classes as part of a Response to Intervention initiative. Implementation continued to increase with the Multi-Tiered System of Support initiative, which was included in the 2015 [Every Student Succeeds Act](#). Typically, districts' intervention efforts began in the elementary grades and focused on reading intervention before expanding to math intervention and to the middle grades.

Why is math intervention important for the middle grades?

The middle grades are a critical juncture that impacts students' future academic success and career opportunities. Middle-grades students may need math intervention for many reasons, including prior difficulties in the elementary grades, new challenges posed by the more abstract content and faster pace in the middle grades, and non-academic factors, such as missing content due to moving. Yet, despite the strong need for math intervention at the middle grades, there has been little research about how schools are implementing these classes, what's working well, and what challenges they are facing. In general, there has been more research and more resources for intervention at the elementary grades than the middle grades.

How are U.S. schools implementing math intervention?

To find out about the landscape of math intervention classes, we conducted a [national survey](#) of U.S. public schools. We administered the online survey to a nationally representative sample of 2,024 urban or suburban public schools with students in grades 6, 7, and 8 in the spring of 2017. Approximately 43% of schools (876 schools) responded to the survey, with one respondent per school. The survey results revealed that 69% of schools offered math intervention classes for middle-grades students in the 2016–2017 school year.

The survey asked questions about intervention class structures, practices, and challenges. The findings revealed common themes in approaches and challenges but also a lot of variation in implementation models, including scheduling, class length and/or frequency, and class size. We incorporated relevant survey findings into this guide to provide information about the national landscape of middle-grades math intervention practices.

After completing the survey in 2017, we continued to work with districts during the challenging years of schooling during the COVID-19 pandemic. We found that the survey's findings are still relevant and that there is heightened interest in intervention classes because of widespread concern about students falling behind in math. Some districts have expanded their math intervention initiatives to address increased student needs. As part of these efforts, some districts have been able to add positions for interventionists, while others have faced staffing shortages and other challenges.

Getting Started with Math Intervention

Bring together a team to develop an initial plan for math intervention classes and to support their ongoing implementation.

Convene an Intervention Planning Team

Any schoolwide effort focusing on math intervention will benefit from information and guidance from a variety of perspectives within the school community. The Intervention Planning Team will take on the critical work of establishing and communicating a vision of and goals for math intervention and of planning the structure of the classes, including scheduling and class size.

Assembling a team that includes a cross section of staff members in different roles ensures that a range of perspectives is represented in your discussions and decisions; it also allows you to examine math intervention within the broader context of other school improvement efforts across subject areas. Be sure to include people with the following roles: principal or assistant principal, math curriculum coordinator, math coach, math intervention teacher, general education math teacher, and special education teacher.

Intervention Planning Team: Key Tasks

- Conduct a needs assessment
- Establish a shared vision and goals
- Determine how to schedule intervention classes, considering class length, frequency, and duration
- Make recommendations about class structures (e.g., class size and composition) and staffing models
- Determine entrance criteria and a process for identifying students for math intervention

These tasks are described in more detail throughout the guide.

Conducting a Needs Assessment

A key step in planning for mathematics intervention classes is to gather information on the overall need for mathematics intervention within your school.

Gather and examine data

The Intervention Planning Team will need to gather data to make well-informed decisions for your school's particular needs and situation. Conducting a needs assessment can help you design a comprehensive and equitable plan. Use data from different sources to get a fuller picture of the need for math intervention. Here are a few suggestions:

- **Examine existing assessment data** to identify students who are performing below grade level and need math intervention. Data from state standardized assessments and district benchmark assessments can give you an initial picture.
- **Administer short screening assessments** to identify which students have the lowest performance and need math intervention.
- **Gather teacher recommendations:** Ask teachers to identify students whose grades or performance is low and who they think would benefit from additional support. It's important to have teachers provide specific evidence of students' difficulties to support data-informed decision-making and to mitigate bias in teacher recommendations.

By gathering and examining these types of data, your team will get a fuller picture of the overall need for math intervention in your school and be able to accurately estimate the number of students who need math intervention. This information is essential for making decisions about intervention classes, such as scheduling and class size.

What if a large percentage of students need math intervention?

One of the most frequently identified challenges in our [national survey](#) was that schools have more students who need math intervention classes than they are able to serve. If the needs assessment reveals that a large percentage of students need intervention, your school may need a multipronged response that extends beyond adding more intervention classes, as these classes on their own are unlikely to be sufficient for addressing larger issues with core math instruction. Consider ways to address students' needs by strengthening core math instruction **and** providing intervention.

Establishing a Shared Vision and Clear Goals

The Intervention Planning Team has the critical role of setting an initial vision and identifying high-priority goals for math intervention classes.

Key questions for the team to consider are: What goals are needed to help our students become more successful, motivated, and confident math learners? What is our vision of what this looks like in practice? Establishing and communicating a vision for math intervention classes sets guideposts both for teachers' instruction and for the expectations of the broader school community. It's important for the school community as a whole to have a shared understanding what intervention class is and what it is not

Identify, clarify, and prioritize goals

A common challenge is that intervention teachers report that the goals and expectations of math intervention classes are unclear and that there are competing demands for how intervention time should be spent. Both teachers and students experience confusion and frustration when math intervention classes have undefined goals. To support teachers in optimizing the available time they have for planning and teaching, setting a manageable number of high-priority goals for math intervention classes is critical. Our [national survey](#) found that many schools identified three key goals for math intervention classes: (1) address gaps in foundational concepts from prior grades, (2) reteach and support grade-level content, and (3) build students' motivation for and confidence in doing math.

Once you've identified your goals, be sure to put in place dedicated time and a process to routinely reflect on progress toward your goals and make adjustments as needed. Goals are more likely to be helpful when they feel attainable and when there is a commitment to working in a collaborative and supportive way to meet them.

“Our **overarching goal** for math intervention classes is to help students become more successful mathematics learners by strengthening both their understanding of mathematics and their motivation and confidence as learners.”

—Math Intervention Teacher

Example goal-setting activities

These activities are designed to engage school and district teams in building a shared vision of and goals for math intervention.

Activity 1: What Math Intervention Class *Is* and *Is Not*

Purpose: This activity helps to promote discussion about math intervention classes to build a shared understanding and clarity of vision. Team members share how they envision math intervention class and work together to define what this class *is* and *is not*.

Directions: To focus the discussion, this activity uses charts with the headings “Math Intervention Class Is” and “Math Intervention Class Is Not.” We have created two chart versions for you to choose from: (1) a blank chart to fill in, and (2) a partially completed chart to review and add ideas to. For both options, have team members start by working individually to write down ideas and/or review the example ideas. Then have a group discussion to create a shared list of bullets for each column.

Resources: The charts are available in two formats: a Google Docs file to fill in or print, and a JamBoard activity, in which team members add virtual sticky notes with their ideas.

Figure 1. Example of Completed Charts for Activity

| Math Intervention Class <u>Is</u> | Math Intervention Class <u>Is Not</u> |
|---|--|
| <ul style="list-style-type: none">• An additional class that supplements students’ general education math class• Focused math instruction that is targeted to students’ strengths and needs• Engaging, active, and appropriately challenging• A class with a low student–teacher ratio to allow for high levels of interaction• A class with a safe, supportive culture where students can ask questions and take risks in their learning• A learning community that promotes student collaboration• A class that requires careful planning and preparation from teachers | <ul style="list-style-type: none">• A replacement for students’ general education math class• “Overflow time” for the general education math class• A “slower and louder” repeat of general education math lessons• Students passively doing worksheets (in print or online)• Students working solely on computers without interacting with other students and the teacher• A place of low expectations for students• A study hall• A homework help club• Test-preparation boot camp |

Activity 2: Goal-Sorting Activity

Purpose: This activity provides a structure for discussing, setting, and prioritizing goals for math intervention classes. Establishing clear goals is important for making decisions about how to use intervention time and for communicating unified messages to the school community.

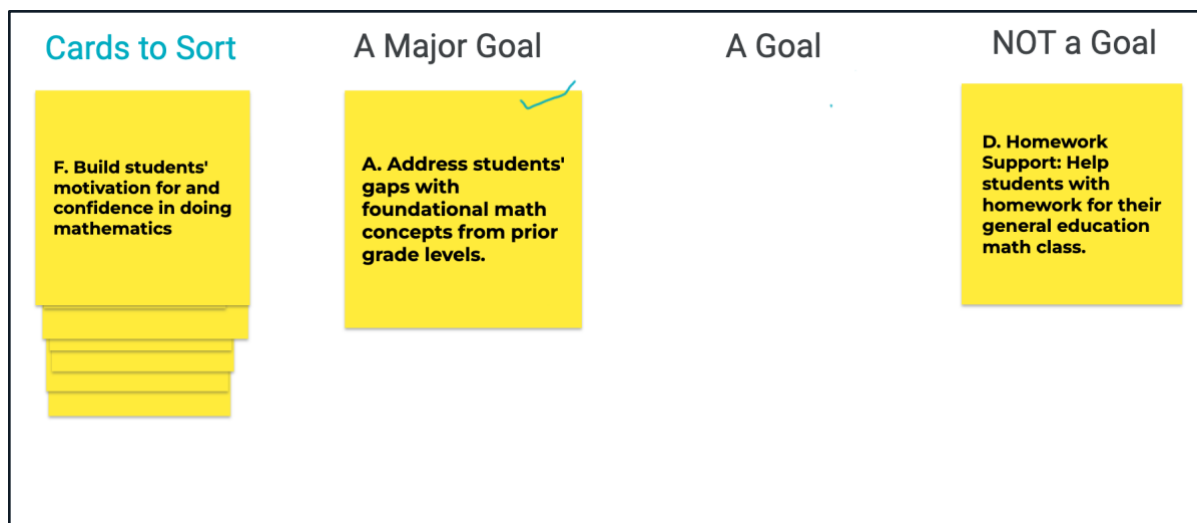
Directions: Participants have a set of cards, each listing a possible goal for math intervention. The process of sorting the cards helps the team identify and clarify their goals, thereby building a shared understanding.

- Team members discuss the cards and sort them into three categories: **a major goal, a goal, or not a goal.**
- Teams use a chart to record their choices and to note goals they would like to discuss further.
- Teams discuss their priorities and select their top three goals.

Note: We purposely created a card set with a variety of different goals to promote discussion and to allow for placing some cards in the “not a goal” category. The set includes some goals we would recommend and others we would not.

Resources: The activity is available in two formats: (1) *Goal Cards* to print and cut apart for sorting, and (2) a *JamBoard* version with virtual cards to sort. The *Goal Recording* handout can be used with both versions. These resources are available at: <https://go.edc.org/MathInterventionGuideResources>

Figure 2. Example of Activity 2: Sorting Goals for Math Intervention



Identifying Students for Math Intervention

To identify students for math intervention, you'll need to examine existing data (e.g., from district assessments) and collect additional information (e.g., screening, teacher input). In addition, you'll want to set clear entrance criteria and develop a structured decision-making process for determining which students to enroll in these classes.

We recommend using a variety of data sources, such as screening tools, math assessments, and teacher input. Our [national survey](#) findings revealed that most districts used more than one data source to identify students for math intervention. The most common data sources were standardized assessment scores (62%), teacher recommendations (53%), and district assessment scores (41%).

Table 1. National Survey Findings: Factors Considered in Identifying Students for Math Intervention

| Factor | % of Schools | SE |
|--|--------------|-------|
| State-required standardized assessment scores | 62 | (2.2) |
| Teacher recommendations | 53 | (2.2) |
| District-based assessment scores | 41 | (2.2) |
| Students' grades from their general education math class (from the prior or current school year) | 35 | (2.2) |
| Diagnostic screening assessment scores | 34 | (2.1) |
| Recommendation in an IEP or 504 plans | 18 | (1.6) |
| Parent requests for their child to participate in math intervention class | 10 | (1.5) |
| Guidance counselor or Student Support Team recommendations | 8 | (1.3) |
| Student requests to participate in math intervention class | 3 | (1.0) |
| Other ($n = 21$) | 1 | (0.6) |

Note: Respondents could select up to three factors. For the "Other" category, 17 of the 21 responses indicated that "all students take math intervention" and thus they did not need to use entrance criteria. All data tables and graphs in this guide are from Brodesky et al. (2018).

OVERVIEW OF DIFFERENT TYPES OF ASSESSMENTS

1. **Screening tools** are short assessments that can be used with all students to identify which learners have the lowest performance and need intervention. Best practice is to conduct universal screening by using the tool with all students. While screening tools are helpful for the identification process, they are not designed to provide comprehensive diagnostic information about students' math strengths and difficulties.
2. **Summative assessments** are designed to measure student performance at the end of a period of instruction, such as quarterly benchmark assessments or a state standardized test at the end of the school year. Because these assessments are administered regularly, they provide an existing source of data that schools can use as part of the process for identifying students. For example, assessment scores that are below proficiency can serve as a starting point for identifying potential students for intervention, followed by examination of data from other sources. While summative assessments are useful for the identification process, students' performance data may not be specific enough to guide diagnostic decisions about which topics to focus on during intervention.
3. **Diagnostic assessments** (formal and informal) are designed to gather diagnostic information about students' math understandings and difficulties and to identify areas to focus on in intervention. Some formal diagnostic assessments are adaptive in that the questions are tailored to students' responses (in contrast to assessments with a fixed set of questions). The responsive nature of adaptive assessments helps them be more precise in identifying where students are in their learning. Diagnostic information can also be gathered by using informal methods, including conducting math interviews with students, examining student work, and observing students.

Why is it important to use a multifaceted approach?

Using a multifaceted approach and a structured decision-making process for identifying students can help reduce the bias associated with individual data measures (e.g., standardized test scores, teacher recommendations). We do not recommend using one summative assessment as the sole data source because it may not provide a full picture of students' math knowledge; for example, students may have test anxiety and other difficulties showing what they know on standardized assessments. It's important to use

different data sources to get a more comprehensive view of students' strengths and difficulties in doing math.

In examining student assessment data, considering removing names and demographic information in order to mitigate implicit racial or gender bias. An important responsibility of your leadership team will be to monitor the process and ensure that any issues of disproportionality (e.g., in regard to gender, race, English proficiency, or socioeconomic status) are addressed.

Some groups may be over-identified or under-identified for math intervention. For example, if the percentages of boys and girls in math intervention classes is out of proportion to the school population, then it's possible that boys are being over-identified and/or that girls are being under-identified. In these cases, it's important to (1) re-examine the data to ensure that identified students meet the entrance criteria, and (2) consider revisions to the decision-making process, such as how different factors are weighed. It is also helpful to provide teachers with PD and guidance on when to recommend students for math intervention and to raise awareness about issues of disproportionality. Because these issues are broader than math intervention, it's important to also consider ways to strengthen core math instruction to better support the range of learners in your school and/or district.

Identifying Students for Math Intervention Classes

SUGGESTIONS

- **Set entrance criteria and a decision-making process.**
 - What criteria will you use to identify students for math intervention classes?
 - What process will you use to decide which students to enroll?
 - Will all data sources have the same importance, or will some carry more weight than others?
- **Examine existing data on student performance.**

Possible sources:

 - State standardized assessment scores
 - District-based assessments
 - Other assessments
 - Math grades from the current and/or prior school year
- **Collect additional data.**

Consider the following:

 - Use a screening tool to screen all students
 - Use a diagnostic assessment
 - Ask teachers to make recommendations
 - Seek input from guidance counselors, the Student Support Team, and/or other relevant sources of student information
- **Plan a schedule for identifying students and for entering intervention.**
 - When will you identify students for intervention classes for the next school year? Will you do this during the current school year?
 - If students will enter your middle school from different elementary schools, when and how will you identify students for sixth-grade intervention?
 - If a student is having difficulties in their current core math class, what process will be used to refer students for intervention?
 - When will students be able to join intervention classes—just at the beginning, periodically throughout the year, or at any time?
- **Review for issues of disproportionality.**
 - Examine the group of students selected for intervention to check for and address any issues of disproportionality in regard to gender, race, English proficiency, socioeconomic status, etc.
 - Determine if any groups are over- or under-identified for math intervention, based on the school population.

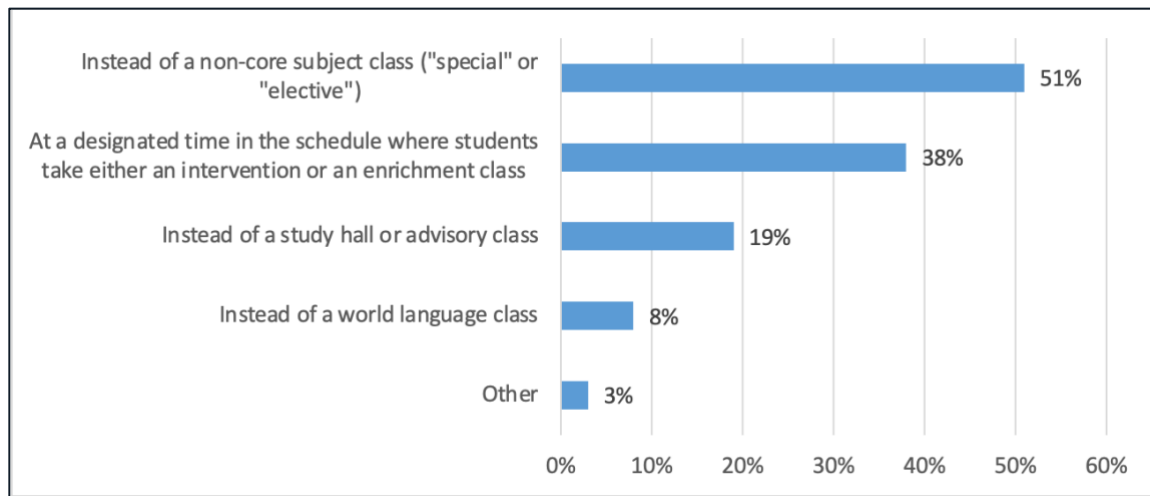
Scheduling Math Intervention Classes

A critical step in implementing intervention classes is figuring out how to fit them into the school schedule. It's essential that intervention time is provided **in addition to** general education math classes so that students do not miss their core math instruction (Tier 1).

Scheduling intervention classes poses several common challenges. It can be difficult to add time for intervention classes to an already-packed school day. If students will need to miss other classes to attend math intervention, decisions need to be made about which classes they will miss. When individual students also need reading intervention or other supports, scheduling can be even more complicated.

Our [national survey](#) revealed that schools are using a variety of scheduling approaches (Figure 3). The two most common approaches were to schedule intervention classes during an elective block, such as art or music (chosen by 51% of schools) and to have a designated block during which students receive either intervention or enrichment (chosen by 38% of schools).

Figure 3. National Survey Findings: Scheduling Math Intervention ($n = 603$ schools)



There isn't one best way to schedule intervention classes; each approach has tradeoffs. In this section, we provide an overview of several common approaches, their benefits and challenges, and some tips for successfully implementing each approach.

GUIDING QUESTIONS: SCHEDULING INTERVENTION CLASSES

General Scheduling Questions

- **Schedule:** When will the classes be held? Will students need to miss other classes to attend?
- **Class time:** How long will the classes be?
- **Frequency:** How often will the classes meet each week?
- **Duration:** For how many weeks or months will the classes meet?

Key Questions for Evaluating a Scheduling Approach

- **Implications for the school schedule:** How well would this scheduling approach fit with your current school schedule? What changes would need to be implemented?
- **Number of math intervention classes:** With this scheduling approach, how many math intervention classes will you be able to offer?
- **Class size:** What class size are you aiming for? Will you set a preferred range (e.g., 8–12 students per class), or set a cap on the maximum number of students per class?
- **Number of students:** How many students will you be able to enroll in math intervention classes using this scheduling approach and preferred class size? What percentage of students who need math intervention will you be able to enroll?
- **Staffing:** How will you staff these classes? If intervention classes will meet concurrently, what staff members are available to teach them?
- **Classroom space or location:** What spaces are available to hold intervention classes at these times in the schedule? If the classes will meet concurrently, are there enough spaces available?
- **Alignment with goals and/or vision:** How well does this schedule approach align with your goals and vision for math intervention? To what extent will it provide sufficient intervention time for reaching your goals?

Approaches to scheduling math intervention classes

This section describes some common scheduling approaches, including the characteristics, benefits, and challenges of each, and some tips for implementing each approach.

1. Offer intervention instead of an elective

In this approach, students are enrolled in a math intervention class that takes place during a non-core subject, such as an elective block. These classes typically meet two or three times a week and are the length of a typical class. With this scheduling approach, students may miss an elective class that is of strong interest to them. Some students may feel like they are missing out: While their peers are in a fun elective, they are in math intervention class. Other students may appreciate having the additional math support in a smaller class and not mind missing an elective. If students have more than one elective in a semester, they may still be able to have an elective in addition to math intervention class.

| Math Intervention Class Instead of an Elective | |
|---|---|
| Class Length and Frequency | <ul style="list-style-type: none"> The intervention class period is the same length as an elective class period (e.g., 40–60 minutes). Classes tend to meet two to four times per week, depending on the frequency of electives in the schedule. |
| What Do Students Miss? | <ul style="list-style-type: none"> Students miss an elective class, such as art or music. The schedule of the core academic classes is not impacted. |
| Number of Students Enrolled and Class Size | <ul style="list-style-type: none"> The number of students who can be enrolled in intervention classes will depend on the number of elective blocks, the availability of staff to teach intervention classes during elective blocks, and any class size limits. This approach allows for smaller class sizes for intervention because the other students are already enrolled in the elective block. |
| Staffing | <ul style="list-style-type: none"> This approach works well for schools that have designated intervention teachers who are assigned to teach these classes during elective blocks for each grade. This approach can be used with different staffing models. |

| Math Intervention Class Instead of an Elective | |
|--|--|
| Duration and Exiting Intervention | <ul style="list-style-type: none"> Intervention classes will have the same duration as an elective, such as one term. If students are ready to exit intervention, they can leave at the end of a term and take a new elective in the next term. |
| Benefits | <ul style="list-style-type: none"> Students do not miss a core subject to attend math intervention class. Typically, elective blocks are already part of the school schedule. This approach allows for smaller intervention class sizes because other students are in electives. Students can leave math intervention class at the end of a term and typically transition smoothly into an elective at the start of a new term, despite having missed an elective in the prior term. |
| Challenges | <ul style="list-style-type: none"> Students are not able to take an elective that may be of strong interest to them. Students may feel like they are missing out because other students are going to electives. |
| Implementation Tips | |
| <ul style="list-style-type: none"> Communicate with students and parents about the benefits of math intervention class and why students are being asked to miss electives. Get student buy-in for math intervention to help them view the class positively and ameliorate any feelings of missing out on an elective. Make math intervention class engaging and build a supportive classroom community. | |

Similar approach: Intervention instead of a world language class

In a similar scheduling approach to using an elective block, some schools schedule intervention classes during a world language block. Benefits of this approach are that world language classes tend to meet four or five times a week for a regular class period and thus provide substantial time for math intervention. Because intervention class has a similar frequency to their core classes, students may take the class more seriously. Challenges are that students are not able to take a world language class during that year. It may be difficult to exit intervention class after a semester and join a world

language class because students will have missed the instruction in the prior semester. Suggestions for using this approach are to ensure that students will have options to take a work language class at an appropriate level in the next school year (if they exit math intervention). For example, sixth-graders will have missed the Level 1 language class that their classmates received and will need an option to take a Level 1 class when they are in grade 7.

2. Have a dedicated block for intervention and enrichment

Some schools add a new block for intervention by shaving a little time out of some or all blocks during the day. During this new block, students receive either enrichment or intervention in math and other subjects. For example, a school has a 30-minute block during which all sixth-graders attend an intervention or enrichment class, which run concurrently.

| A Dedicated Block for Intervention and Enrichment Classes | |
|---|--|
| Class Length and Frequency | <ul style="list-style-type: none">• Intervention classes tend to be shorter than a typical class period.• The frequency of math intervention class depends on how many days per week this dedicated block is added to the school schedule. |
| What Do Students Miss? | <ul style="list-style-type: none">• Students do not have to miss a core subject, elective, or world language course to attend math intervention class. |
| Number of Students Enrolled | <ul style="list-style-type: none">• This approach can allow more students to be enrolled in math intervention by scheduling several concurrent sections of classes during the block.• This approach requires collaborative planning to manage student placement and other logistics of running intervention and enrichment class across multiple subject areas during the same block. |
| Staffing | <ul style="list-style-type: none">• If there are several concurrent math intervention classes during the block, then several teachers will need to teach the classes.• Intervention classes may be taught by general education math teachers, math specialists, and math coaches in addition to designated intervention teachers. |

A Dedicated Block for Intervention and Enrichment Classes

Duration and Exiting

- This approach allows schools to choose how long intervention courses will run and when students will move to a different course. For example, a school may decide to change the intervention courses every six weeks.

Benefits

- This approach can serve a large number of students by having concurrent math intervention sessions (if enough staffing is available).
- Students do not need to miss other classes.
- Students may feel better about going to math intervention class when many other students are doing something similar.
- Schools can decide on the duration of the intervention class and when to change to a new session.
- Because students are not missing another class to attend intervention, they can shift to any new class with ease.

Challenges

- Carving out time for an intervention and enrichment block may mean that other classes need to be shorter.
- Intervention classes tend to be shorter than regular class periods.
- Staffing may be a challenge, depending on the number of math teachers and intervention teachers available to teach concurrent math intervention classes during the block.
- Decisions need to be made about how to place all students in a grade in an intervention or enrichment class to fit their learning needs.
- This approach requires coordination across subject areas to plan which students will get intervention or enrichment in which subject areas during the block.

Implementation Tips

- Assign teachers who have strong math content knowledge and pedagogy to teach the math intervention classes. It doesn't work well to have teachers of other subjects responsible for the math intervention classes.
- If general education teachers will teach the intervention blocks, it's helpful to provide scheduled planning time focused on intervention so that teachers are positioned to maximize use of the time. Without this dedicated planning time, general education teachers may feel like they do not have time to prepare for intervention because of the demands of planning for the core math classes.
- If possible, avoid scheduling the intervention block at the end of the day when students may be tired and distracted. If this time slot is unavoidable, teachers need to be strategic in making intervention class engaging and keeping students focused.

Align the schedule with your goals and vision

In some ways, scheduling feels like a sensible and concrete place to start the planning process for math intervention classes. After all, one change in a schedule can affect many students, teachers, and classes. However, focusing on fitting the intervention classes into the schedule without first evaluating the overall need for math intervention at your school and establishing your goals and vision for math intervention may lead to a mismatch. For example, you may set high expectations for the number of mathematics topics to address in intervention classes that—it turns out—can only meet for two 30-minute sessions per week. If the intervention classes will meet less frequently than you'd originally envisioned, you will likely need to scale back your goals.

There needs to be some calibration between your scheduling approach and how the schedule supports your identified goals and vision. It's helpful to use an iterative process of working on both the schedule and your vision and goals in order to align them. As you develop and finalize your schedule, reflect on how it aligns with the goals and vision you have established, and adjust either the schedule or your goals if needed. For example, if your intervention time is too limited to achieve your goals, you might prioritize a subset of math topics in order for your goals to feel attainable to both teachers and students.

GUIDING QUESTIONS: ALIGNMENT WITH GOALS AND VISION

Check Alignment

- How well does the amount of scheduled intervention time fit your goals, and vice versa?
- How might you adjust the schedule and/or goals to strengthen alignment between them?
- If the schedule cannot be changed, how might you revise your goals to better fit the available time?

Reflect on Current Practices

- What's working well in your scheduling approach to support your goals and vision for math intervention? What are ways to build on these strengths?
- What challenges are you facing in your current scheduling approach? What are ways to address these challenges?

Class Length and Frequency

A central purpose of math intervention classes is to provide additional time for focused instruction and support for students with math difficulties.

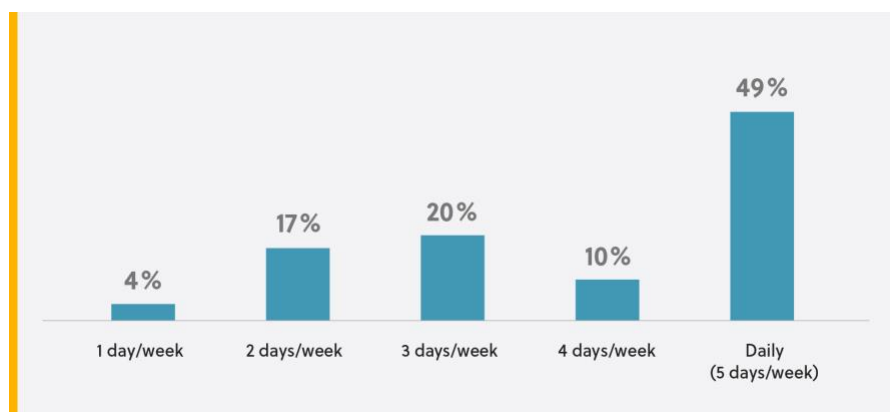
This additional time is critical for building students' conceptual understandings, addressing any gaps and misconceptions, and supporting students' growth and success. Decisions about class length, frequency, and duration are closely related to your choice of scheduling approaches and need to be aligned with your overall goals and vision for math intervention.

In our [national survey](#), we found that the most common length of math intervention classes was similar to regular class periods; about 69% of schools had classes that were 40–59 minutes (Table 2). At about half the schools, intervention classes met five days a week (Figure 4). The second most common frequency was three times a week.

Table 2. National Survey Findings: Length of Intervention Classes (n = 607)

| Length | % | SE |
|----------------------|----|-------|
| Less than 20 minutes | 1 | (0.4) |
| 20-29 minutes | 8 | (1.3) |
| 30-39 minutes | 13 | (1.5) |
| 40-49 minutes | 43 | (2.2) |
| 50-59 minutes | 26 | (1.8) |
| 60-69 minutes | 3 | (0.8) |
| 70 minutes or more | 5 | (1.1) |

Figure 4. National Survey Findings: Frequency of Math Intervention Classes



Math Intervention Class Length and Frequency SUGGESTIONS

- **Length of classes:** Aim for class sessions that are at least 30 minutes and ideally 40–60 minutes. It is challenging to make productive use of sessions that are shorter than 30 minutes. Longer chunks of time allow for more meaningful and sustained attention to a math topic. Keep in mind that even highly organized teachers lose some time in the transitions between activities or classes.
- **Frequency of classes:** It's helpful to have intervention classes meet several times a week to have continuity between sessions and to be able to build on activities from session to session. Meeting just once per week does not seem sufficient. Particularly if classes are 30 minutes or less, aim to have them meet more frequently, such as four to five times per week. In addition, classes with a shorter duration, such as six weeks, will benefit from a more intensive frequency.
- **Align class length, frequency, and duration with your goals and vision:** A common challenge is that intervention classes are not allocated sufficient time to reach the intended goals and vision. If there is a mismatch, teachers and students may feel like the goals are unattainable in the allocated time and feel overwhelmed or defeated. Adjust the schedule and/or your goals to improve their alignment and position teachers and students for success.
- **Protect math intervention class time:** Avoid cancelling these classes for school assemblies or other events. Protecting intervention time supports student learning and communicates to the whole school community that these classes are valued. If these classes are cancelled frequently, it may send an unintended message that intervention is **not** valued.
- **Maximize use of intervention time:** Support intervention teachers in planning strategically. For example, different lesson plans are needed for sessions that are 30 minutes vs. 50 minutes long or that meet daily vs. twice a week.

Duration of Math Intervention Classes

Another key scheduling decision is how many weeks or months the class will run during a school year.

Our [national survey](#) findings showed that by far the most common duration of math intervention classes was a full school year, chosen by 65% of the schools surveyed. The second most common duration was a semester, chosen by 13% of schools.

Table 3. National Survey Findings: Duration of Math Intervention ($n = 604$ schools)

| Frequency | % | SE |
|------------------|----|-------|
| Full school year | 65 | (2.2) |
| A semester | 13 | (1.5) |
| A trimester | 3 | (0.7) |
| A quarter | 8 | (1.1) |
| 10 weeks | 4 | (1.3) |
| 6 weeks | 3 | (0.8) |
| Other | 2 | (0.6) |

Implementing classes with a long duration

Scheduling math intervention classes with a longer duration (e.g., a school year or a semester) presents both benefits and challenges.

Benefits of a longer duration

Middle-grades students are often identified for math intervention because they have low performance on multiple standards and thus would benefit from additional instruction and support. Having math intervention class for an extended duration provides essential time to focus in-depth on high-priority math content topics and build students' understanding. It also supports teachers in uncovering students' math strengths and difficulties and then tailoring their instruction to students' learning needs. By working together over a long duration, teachers can build strong relationships with students and foster a supportive classroom community. In addition, students may take the class more seriously when it lasts a full semester or school year.

Challenges of a longer duration

If year-long intervention classes are scheduled during an elective, students may miss having any electives during that school year. Some students may be ready to exit the

intervention class before the end of the year, but there may be challenges to joining a different class.

Implementation tips

Here are some suggestions for optimizing math intervention classes with a longer duration:

- Set clear exit criteria and do periodic checks to determine whether students are ready to leave math intervention. Avoid making assumptions that all enrolled students should stay for the full year. For example, if students are ready to exit intervention class, they can leave at the end of a semester and start an elective with the next semester.
- The start of a new semester can also be a good time for new students to join an intervention class.
- Plan a scope and sequence of math content topics to make productive use of the full duration of the intervention class and best address student needs. Make adjustments as needed during the year.
- Engage students in reflecting on their learning and progress over time, and encourage them to see the benefits of being in intervention class for a year or semester.

Implementing classes with a short duration

Scheduling math intervention classes with a shorter duration (e.g., four to eight weeks) also presents benefits and challenges.

Benefits of a shorter duration

Intervention classes with shorter durations can allow for flexibility in scheduling; for example, students may get intervention in a different subject area each cycle, and different groups of students may get intervention over time. Having shorter classes also works well with the scheduling approach of a combined intervention–enrichment block.

Challenges of a shorter duration

Six weeks is not a lot of time for teachers to identify students' math learning needs and build relationships. Students with math difficulties are likely to need support on more content topics than can be addressed in the allocated time. The short time span may also lead some students to think that intervention is not a “real” class, and they may not take it as seriously as a class that lasts a semester or year.

Implementation tips

When intervention classes have a short duration, it's important to set clear, manageable goals to maximize the available time. Here are some suggestions:

- Select a specific math content focus, and set attainable learning goals for the allocated time span.
 - Select a narrow slice of content to address a common area of difficulty for students.
 - Identify a small set of specific learning goals that can be reached in the time frame. Having a doable set of goals will help students feel better able to succeed.
 - Plan a schedule of lessons to work on the goals at a reasonable pace.
- If scheduling allows, strategically group students so that those with similar difficulties are placed together.
- If general education math teachers are assigned to teach intervention classes, it's helpful for them to work with students from their core classes. Teachers can then jump-start intervention class by building on their knowledge of and relationships with their students.

Size of Math Intervention Classes

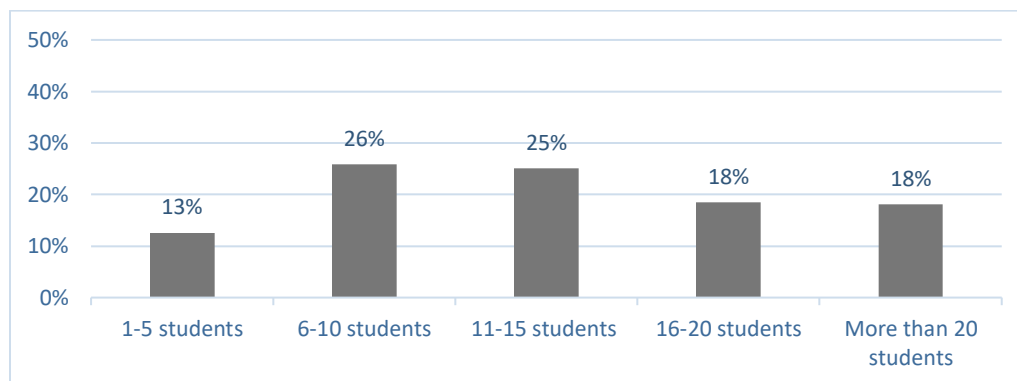
Having a lower student-to-teacher ratio has many benefits for intervention classes.

Smaller classes allow teachers to work more closely with students, which can help students feel more comfortable talking about their ideas and asking questions. A smaller class size can also help teachers foster a supportive learning community and build relationships with students.

In their core math classes, students who struggle may try to hide their difficulties. They may be hesitant to participate because they are concerned about making mistakes. But in a smaller intervention setting with classmates who also struggle, students are likely to feel more comfortable participating in discussions and sharing their math ideas. They may also feel a stronger sense of accountability for participating in class and working on their math tasks.

In our [national survey](#), 51% of schools reported that their math intervention classes had between 6 and 15 students (Figure 5). As a point of reference, the average size for a U.S. middle-grades class is about 25 students (U.S. Department of Education, 2017–2018).

Figure 5. National Survey Findings: Math Intervention Class Size ($n = 607$ schools)



For the elementary grades, the recommendation is to have small-group intervention classes with three to six students (National Center on Response to Intervention, 2010). However, there are not specific recommendations for the size of middle-grades intervention classes. A study of 42 middle schools found that Tier 2 intervention classes typically had about a 10:1 student–teacher ratio (National Center on Response to Intervention, 2013). Having somewhat larger intervention classes in the middle grades makes sense because older students are more likely to be able to work independently and self-regulate their learning than younger students.

Some schools place caps on their intervention class size (e.g., 10–14 students), while others adjust class size based on the number of students identified for intervention. From our interviews with intervention teachers and math leaders, we learned that teachers believe an intervention class size of 8–12 students works well. Some benefits of this class size are that it's large enough to have students work in small groups and to vary the groups, but it's also small enough for teachers to tailor instruction to students' strengths and needs and to work closely with pairs or individual students.

Consider the mix of students

It's important to consider not just the class size but also its composition. The **mix of students** in math intervention classes impacts the class dynamics and building a cohesive learning community. If possible, group students who have similar difficulties in the same class sections so that instruction can be focused and targeted to their needs. Consider the proportion of students with and without IEPs, students with social/emotional or behavioral challenges, and other factors that may impact the class composition. It's also important to consider staffing, such as whether a co-teacher or instructional aide is needed to provide additional support.

GUIDING QUESTIONS: CLASS SIZE

If you are getting started with math intervention:

- How many students need math intervention? If all identified students are placed in intervention, how many students would be in each class?
- How many intervention classes will you be able to offer? Make an estimate based on your scheduling approach, availability of staff, availability of classroom spaces for intervention, and any other relevant factors.
- Based on your goals and vision for math intervention classes, what size classes are you aiming to have?
- If you select a particular class size, what percentage of the students who need math intervention will you be able to serve?
- What considerations will you take into account when deciding on the composition of students in math intervention classes?

If you want to review your current practices:

- What are the benefits and challenges of current math intervention class sizes?
- How well do your current math intervention class sizes support your goals and vision for these classes?
- How might you improve the class size and/or composition of these classes to better support student learning?

Location of Math Intervention Classes

Math intervention locations can range from small areas within a larger room to full classrooms.

If space is available, it's helpful to have dedicated rooms (or a location within a room) for math intervention classes. This allows intervention teachers to set up the space in a more permanent way to provide a positive and supportive classroom environment. Here are some suggestions:

- Very small classes can be held in an office or at a table in the school library.
- When the same classroom space is used for both core math classes and intervention classes, it's helpful to designate a small area of the classroom for intervention
- When intervention teachers do not have a designated space for intervention, they may need to work in several classrooms. In these situations, it's helpful for teachers to have a cart to transport their math intervention materials.

FROM THE CLASSROOM

Creating an Inviting Space for Math Intervention

Response to Intervention Math Teacher (Grades 5 and 6)

Our math intervention class meets in the corner of a large classroom with a dedicated space for storing teaching materials. While other students use the rest of the room throughout the day, their classes are not concurrent with math intervention and they do not typically use this corner of the room. I want our working space to be inviting and fun! Students love the orange stools that I found for free on a social media site. We also often use a two-sided movable whiteboard and personal mini-whiteboards for recording ideas and showing work. I keep manipulatives and other math materials close by to make the most of our time together. I love to use concrete materials because students can easily rearrange the materials to reflect a change in their thinking or to model a new situation. The materials also serve as a great conversation piece to support students in sharing and discussing mathematical ideas.



Setting Math Content Priorities

“Too much content, too little time” is a common challenge for math intervention classes.

Unlike core math classes (Tier 1), many intervention classes do not have a defined scope and sequence. While this allows teachers flexibility for choosing content to fit students’ learning needs, it also poses challenges. Students often need support for more math content topics than can fit in the available time for intervention. Teachers may feel unsure about which mathematics content to prioritize to best meet students’ needs. Rather than attempt to address many topics at only a surface level, intervention time is better used to provide in-depth, focused instruction on high-leverage topics. To maximize the available intervention time, it is helpful to identify a set of **high-priority math topics** and learning goals that align with the proposed schedule. (As part of this process, you should also decide which topics **will not** be addressed in math intervention class.) Having clear goals and a manageable scope helps teachers and students use intervention time productively and feel empowered to reach the goals.

Key steps for setting content priorities

It’s helpful to make content decisions collaboratively by bringing together a group of intervention teachers, math leaders, coaches, specialists, and other relevant participants. This group will create an initial scope and sequence for math intervention classes and then meet periodically during the school year to adjust the plan as needed.

1. Identify high-priority topics

Examine the major focus areas for the elementary and middle grades and use them as a starting point to identify high-priority topics for math intervention. Because students are likely to need support with content from current **and** prior grade levels, it’s helpful to review the major focus areas in the standards and their progression. The [Achieve the Core](#) website is an excellent resource for this. According to Achieve the Core, the major focus areas for grades 3–5 are multiplication and division of whole numbers and fractions; for grade 6, the major focus areas are ratios and proportional relationships, early expressions and equations, and arithmetic of rational numbers.

2. Gather and examine assessment data

First, analyze existing assessment data, such as from district or state assessments, to identify specific math topics that have low performance in your school or district for each grade level and then specifically for students enrolled in intervention. Which topics (from the major focus areas) had the lowest performance?

Next, administer diagnostic assessments with students in math intervention to gather data about their specific areas of difficulty in the major focus areas. Be selective about how many assessments you are giving students to minimize the time you are taking away from instruction. Use the diagnostic results to plan focused instruction for math intervention and avoid collecting more assessment information than you need or will use.

3. Review the grade-level scope and sequence

Meet with grade-level colleagues to examine the grade-level scope and sequence and identify common areas of difficulty. What content topics (in the major focus areas) tend to pose the most challenges for students in this grade?

Work backward in the progression to identify topics from prior grades that are critical for success with high-priority grade-level topics. Start with a high-priority grade-level standard and move backward to see the progression of concepts in the prior grades. What topics from prior grades are particularly important for understanding the math content in this grade? What topics from prior grades tend to still pose challenges for students in this grade?

Note: Your aim is to provide support on specific prior content to address gaps and misconceptions and to build a strong foundation for success with current content. However, take care not to go back too far or assume that students need to start at the very beginning of a topic.

4. Align the intervention scope and sequence with the available time and your goals and vision

The scope of the content needs to be a good fit with the intervention class length, frequency, and duration. The plan for a six-week math intervention class will be quite different from a semester- or year-long course.

When intervention classes have a short duration, it's especially important to set a clear purpose, math content focus, and manageable set of goals to maximize the available time. Select a narrow slice of content to address a common area of difficulty for students and identify a small set of specific learning goals that can be reached in your time frame.

When intervention classes have a longer duration, there are more options to consider for planning a scope and sequence. Consider the examples on pages 31-34 of how two teachers planned for their year-long intervention classes.

Setting Content Priorities for Math Intervention

SUGGESTIONS

Ideas to implement

- Collaborate on the process of setting priorities with intervention teachers, math leaders, and other relevant participants
- Focus on the major areas of work for the grade level, and identify key grade-level standards that are critical for student success
- Gather and examine student data (from assessments, teacher input, etc.) to identify areas of difficulty
- Prioritize math content topics to decide which ones to focus on and which ones to cut
- Select content priorities that align with your goals for math intervention class
- Identify topics to reteach by starting with key grade-level standards and moving backward in the progression to select essential foundational concepts
- Map out a scope and sequence that fits the available time for intervention
- Gather ongoing formative assessment data on student learning to inform adjustments to the plan
- Revisit the plan periodically and make adjustments in response to student needs

Things to avoid

- Creating a scope and sequence that is too large for the available math intervention time
- Trying to include all the grade-level content in the math intervention scope and sequence
- Spending a lot of time on low-priority math content
- Going too far back in a learning progression when reteaching content
- Setting expectations for students' math learning goals that are too low

FROM THE CLASSROOM

Our Content Priorities for Intervention

Math Intervention Teacher (Grades 7 and 8)

My year-long math intervention classes have 8–12 students and meet for 57-minute class period five times every six days. To design the intervention courses for grades 7 and 8, I worked with the other middle-grades intervention teacher, the math coach, and the math department head. One of the biggest decisions we needed to make was what math content to focus on to make the most of our intervention time. It was clear that we would not be able to teach all the grade-level standards while also addressing unfinished learning in prior content. We ultimately decided that we needed to focus on helping students build proficiency and understanding of a subset of the grade-level standards; this would allow us to focus in-depth on foundational concepts from prior grades and support students to be ready for their grade-level content standards. Because one of our goals was to improve long-term outcomes for math intervention students, we wanted to choose the standards that would help students strengthen their math foundations, standards that were necessary for understanding future math concepts, and standards that encouraged mathematical thinking. We worked together to decide on an initial scope and sequence. We then continued to meet throughout the year to make changes as we learned more about what our students needed.

Planning for Seventh Grade

For seventh grade, we agreed that the Number and Operations strand was the most important. We decided that we could spend the entire year, if needed, making sure that students had a deep understanding of all four operations with all types of rational numbers. This would support students in their other seventh-grade math work and also give them a strong foundation for understanding many math topics in later grades. We used the scope and sequence for seventh grade core math classes to help us determine our sequence of topics for intervention.

In planning this sequence, we identified which topics to **reteach** and other topics to **preteach**. We identified “operations with integers” as a key topic that our grade 7 students tended to struggle with. We also knew that the general education

math teachers often had a limited amount of time for students to use concrete materials to build their conceptual understanding of integer operations. So, we decided that we would begin teaching this topic in math intervention **before** students learned it in their general education classes. We planned to spend some time ensuring that students had a strong understanding of integer concepts from sixth grade and then

Grade 7 Topics

- How to Learn Math
- Integer Operations
- Operations with Fractions
- Operations with Decimals
- Equations and Expressions
- Percent and Proportional Relationships

focus on building their understanding of integer operations using concrete materials, such as two-color integer chips, so that students would be able to spend additional time with these materials before moving on to using rules for computing with integers.

Planning for Eighth Grade

We looked at assessment data to identify areas where students were likely to need more support in eighth grade. We also spoke to high school teachers to get their input on what topics would be most helpful to focus on in eighth grade intervention. Using this information, we ultimately chose to focus on a small collection of topics: solving equations with one variable, describing functions qualitatively, solving systems of equations, transformations and symmetry, and volume and surface area. Some of the standards we chose, such as those in our transformations and symmetry unit, were intended to offer students some early opportunities for success, and we hoped this would help to promote student buy-in to the course. (It did!)

Grade 8 Topics

- How to Learn Math
- Solving Equations with One Variable
- Functions
- Systems of Equations
- Transformations and Symmetry
- Volume and Surface Area

Strategic Placement of Units

In eighth grade, we strategically scheduled our intervention units around the time for the related units in the general education math class, teaching some concepts in intervention **before** students encountered them in their general education class, some **concurrently** with that class, and others **afterward** to further reinforce the concepts. We found this strategic placement of intervention units to be very helpful. When students feel like the intervention class is helping them with their core math class, they tend to feel more motivated about intervention class. When the focus is on reteaching concepts from prior grades, students may not view the topics as helpful for their core math class, so it's important to explain how these concepts connect to their grade-level topics to get student buy-in. We found that preteaching topics helped students be more confident and successful in their core classes and increased their buy-in for intervention.

Because planning for preteaching takes a significant amount of knowledge about the way concepts are taught in the general education class and coordination with the general education teachers, we decided to limit the number of topics to preteach to one or two a year. It worked well to have a mix of preteaching, reteaching, and concurrent support. We also found that it was helpful to revisit a topic later in the year to see what students had retained from their work on it in their core math class, and then address any unfinished learning at that time.

FROM THE CLASSROOM

My Planning Process for Setting Content Priorities

Math Intervention Teacher (Grades 6–8)

My math intervention classes typically have two to five students and meet two to three times per week for class periods of about an hour. Here is an overview of the process I go through to plan the content priorities and scope and sequence for my year-long math intervention classes.

1. Review grade-level scope and sequence and student information

Either at the end of the previous year or before the year starts, I review two things:

- The relevant grade-level scope and sequence for grades 6, 7, and 8
- Any information I have about the students' math understanding and performance in the prior grade, such as assessment data, teacher recommendation forms, and student math survey results

2. Discuss content priorities

I meet with a colleague and/or math coach to discuss the content priorities and identify which ones are most important to focus on. We discuss the guiding questions below.

Our Guiding Questions

Prior Content to Review: What? When?

- Based on data, what past key concepts do my students not yet understand that are critical for their ability to find success in current and future grades of math?
- When would this content be most relevant to their core math class?

Grade-Level Content

- What grade-level content will be critical for my students' ability to be successful in math this year?
- How can I preview more difficult content before my students see it in their core math class?
- For what content topics in their core class will students most likely need additional concurrent instruction and practice in math intervention?
- What math content of the remaining priorities will best support students in being actively engaged and build their confidence as math learners?

3. Map out content priorities and units

- **Map out math topics for intervention units.** I map out the content priorities based on my answers to the questions above and so they make sense relative to the grade-level math class scope and sequence. I aim for 6–10 units for each grade level.
- **Be flexible about alignment with the core math class.** In math intervention, I will teach some topics at times that align with when they are taught in the core math class. At other points in the year, math intervention will have little or no alignment with the grade-level scope and sequence because our focus is on reviewing high-priority

content from prior grades. I think that building understanding of foundational content to address student needs is more important than trying to stay in sync with the core math class. It allows students to deeply engage in and understand the content, which helps develop their confidence and supports their learning of future content.

- **List learning objectives and activities for each unit.** I add brief notes about the following:
 - Key learning objectives I want to focus on
 - Specific activities that were both engaging and successful previously
 - Reminders to integrate opportunities for mathematical language practice, using concrete representations, and reflection on learning

4. Plan units of instruction and estimate the time frame

I start planning the units by filling in a table with a row for each unit and these columns:

- **Core Math Class:** I start with the fourth column to list the scope and sequence of the core math class to use as a reference for planning how the intervention units will relate.
- **Preview, Current, or Reteach:** I plan whether the unit will review previous content, support current grade-level content, and/or preview upcoming grade-level content.
- **Number of Class Periods and Time in Year:** I make estimates and build in a cushion.

| Unit | Preview, Current, or Reteach | Number of Class Periods | Time in Year | Core Math Class |
|---|------------------------------|-------------------------|---------------|----------------------------|
| Opening Unit for Math Lab: goals, math games, formative assessments | | 3 | 9/9 -9/17 | Order of operations |
| Fraction comparisons Multiplicative reasoning | Aligns with current | 6 | 9/27 - 10/22 | Scale Drawings |
| Decimal ordering/place value Fractions to decimals Division reasoning | Aligns with current | 8 | 10/25 - 11/18 | Proportional Relationships |
| Integers | Preview | ~10 | 11/19 - 12/10 | Circles |

5. Regularly revisit the plan, and adjust as needed

I revisit the year-long plan about every two months to see if I need to make adjustments to the content focus and/or schedule. I examine information on how students are doing in math intervention and in their core math classes. I meet with the math coach to talk about adjustments to the content, pacing, and schedule. In addition, I informally meet with colleagues to gather information about how students are doing in their core math classes and to provide updates on students' progress in math intervention.

Exit Criteria for Math Intervention Classes

While schools tend to have clear entrance criteria and processes for identifying students, their exit criteria may not be as well-defined.

For intervention classes with a short duration, such as six weeks, this may not be an issue; however, when classes run for a full year, some students may be ready to exit intervention at an earlier time. Avoid making the assumption that all students identified for intervention will need the full year. Set clear exit criteria and establish a decision-making process to review students' progress. Gather information on students' performance in intervention and their core math class by using district assessment data, progress monitoring data, and input from teachers.

We recommend planning periodic reviews to determine whether students meet the exit criteria or should remain in the intervention class. It works well to align these reviews with the semester schedule so that students who exit intervention can start a new elective in the next semester. This is also a time when new students could be added to the intervention class.

Some schools use a flexible schedule of having students enter and exit intervention classes at any time. While this allows schools to be responsive to students' changing needs, it also poses challenges. It can be harder for teachers to build a cohesive, supportive learning community and to plan targeted intervention lessons if students are coming and going at different times. We recommend having set times, such as the change of semesters, for students to enter and exit intervention classes.

GUIDING QUESTIONS: EXIT CRITERIA

- What criteria will you use to determine if students are ready to leave a math intervention class?
- What is the expectation for how long students will stay in the math intervention class once they are assigned?
- When will students be able to enter and exit math intervention classes?
- What class will a student transition into if they exit math intervention? Will entering a new class midyear affect their credits, grades, etc.?
- How might placement in a math intervention class this year affect a student's course selection options for next year if they no longer need math intervention?

Staffing Math Intervention Classes

Having strong intervention teachers is a key factor in supporting student success.

Identifying who will teach intervention classes is a critical part of planning for implementation. If choosing among the current staff, the Intervention Planning Team can identify candidates who will likely be most effective in enacting the identified vision and goals for math intervention. If hiring from outside the school, the team can provide guidance and advice for the job posting and selection process.

To inform staffing decisions, first consider a broader question: **What are the characteristics of effective mathematics intervention teachers?** At our forums, we asked school and district teams of leaders and teachers to discuss this question and brainstorm a list of characteristics. While these lists are likely to be aspirational, the process of discussing an ideal candidate can help inform staffing choices and ensure that the best person is selected for the role.

It's important to staff intervention classes with experienced teachers who can address students' varied learning needs and create a positive, supportive learning environment. Ideally, you want to select teachers who possess strong mathematics knowledge and are well-versed in instructional practices for teaching students with math difficulties. Intervention teachers need to set high expectations and convey a growth mindset about the potential of all students to learn math.

Note: A myth about math intervention classes is that they are easy to teach because they are smaller. In actuality, teaching math intervention classes can be challenging. The most common challenges identified by respondents in our [national survey](#) were that students had a wide range of learning needs, and many had negative feelings about being in math intervention.

Different staffing models

In our national survey, the vast majority of schools (85%) reported that their math intervention classes were taught by a staff member with a math-specific role (e.g., math interventionist, teacher, or coach). Your school's needs, schedule, and available resources will help inform your approach to staffing.

Two common staffing models are (1) math interventionists who teach only math intervention classes and (2) general education math teachers who teach both math intervention and core classes. These approaches and two others are outlined below.

Math intervention teachers teach only math intervention classes

Benefits

- Teacher's primary focus is on providing intervention
- They are likely to have expertise in supporting students who are having difficulty with math
- Math intervention class is likely to be distinctly different from the core math class in terms of location, teacher, and classroom culture

Challenges

- The teacher may not be familiar with the grade-level math program
- They may not have dedicated time in their schedule to collaborate with other teachers

Implementation Tips

- Schedule meetings for intervention teachers to plan and collaborate with others
- Help the teacher gain familiarity with the core math program to inform their intervention planning

General education math teacher teaches one or more sections of math intervention class in addition to core math class

Benefits

- The teacher knows the grade-level curriculum (what, when, and how)
- They may have more knowledge of and stronger relationships with students who are also in their core math class
- Students may take the intervention class more seriously or feel more accountability when they also have the same teacher for their core math class

Challenges

- Class risks becoming “overflow time” for unfinished work from core math class
- It may be difficult to distinguish a separate purpose for math intervention and to avoid using intervention time for homework help for core math class
- The teacher needs to plan for an additional class

Implementation Tips

- Clarify goals for math intervention vs. core math classes
- Provide scheduled planning time specifically for intervention classes

Math teacher and special education teacher co-teach math intervention classes

Benefits

- Teachers can collaborate to bring together their expertise in math and special education to support students
- One teacher can work with students individually or in a small group while the other teacher works with the rest of the class

Challenges

- Requires more staffing
- Co-planning time, which is critical for productive co-teaching, may be difficult to schedule

Implementation Tips

- Clarify expectations and roles for each educator
- Schedule co-planning time
- Provide PD and support for effective co-planning and co-teaching

Math coach or specialist also teaches math intervention classes

Benefits

- The coach/specialist is knowledgeable about the progression of math content through the grade levels, which will help them target their intervention instruction
- They are familiar with the core math program's scope and sequence and can apply this information to planning for intervention
- They may already meet regularly with general education math teachers and thus can easily collaborate on support for students who are having difficulties

Challenges

- The coach/specialist is likely to have many other responsibilities in their role as coach or specialist
- They may not have dedicated planning time for preparing for intervention classes
- They may not have their own classroom and thus will need a location for intervention class

Implementation Tips

- Clarify expectations for teaching intervention as part of overall responsibilities for the coach/specialist role
- Schedule time dedicated to planning for intervention

Supporting Math Intervention Teachers

Teaching math intervention classes is quite different from teaching core math classes.

A central part of teaching math intervention classes is making ongoing decisions to target instruction to students' strengths and needs. Making these decisions can be challenging when intervention goals are unclear and there are competing demands for how to use the time. As previously noted, it's essential to clarify your goals and vision of math intervention, set content priorities, and clarify expectations for the role. It's also important to provide intervention teachers with dedicated planning time, opportunities to collaborate with colleagues, and relevant professional learning.

Schedule dedicated planning time for mathematics intervention

In order to prepare high-quality intervention lessons that are targeted to their students' needs, teachers need planning time. In our [national survey](#), two-thirds of respondents reported the challenge of having little or no scheduled planning time specifically for intervention classes. This challenge typically stems from situations in which a general education teacher is assigned math intervention classes in addition to their core math classes, but their planning time remains the same. Be sure to schedule planning time specifically for math intervention lessons and provide support for using the time productively. Other options are to add planning time for intervention by allocating staff meetings for this purpose and having summer planning sessions.

Schedule opportunities for collaboration

Teachers whose primary role is teaching intervention classes may feel isolated, particularly if they are the only intervention teacher in the school. They may not be able to attend common planning meetings with colleagues because their intervention classes are scheduled during those times. Survey results revealed that a common challenge facing math intervention teachers is a lack of scheduled meetings with general and special educators for collaborating and co-planning to address students' needs. Schedule regular meetings focused on math intervention so that teachers can communicate about students' progress in intervention and core classes, share strategies that are helpful for students, identify areas of challenge, and coordinate efforts to support students' math learning.

Plan and offer PD opportunities focused on math intervention

Intervention teachers bring a wide range of prior experiences and knowledge to the role. It's important to provide intervention teachers with professional learning and support, such as coaching, learning walks, classroom observations, professional learning communities, and workshops or courses. We also suggest offering opportunities for group reflection on current practices and progress toward math intervention goals, which can help identify both areas of growth and professional learning needs.

Note: Our companion guide for math intervention teachers (*Strengthening Math Intervention in the Middle Grades: Guide for Teachers*) focuses on instructional practices and includes a variety of resources for knowledge-building and application.

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