

FOUR SUGGESTIONS FOR STARTING THE SCHOOL YEAR IN MIDDLE GRADES MATH INTERVENTION

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Welcome!



Please introduce yourself in the CHAT: name, role, and location.

Agenda



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- Introduction
- 4 Suggestions
- Time for Questions

Please type questions in the Chat.

Defining Mathematics Intervention Classes



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Classes provided for students *in addition* to their core math classes

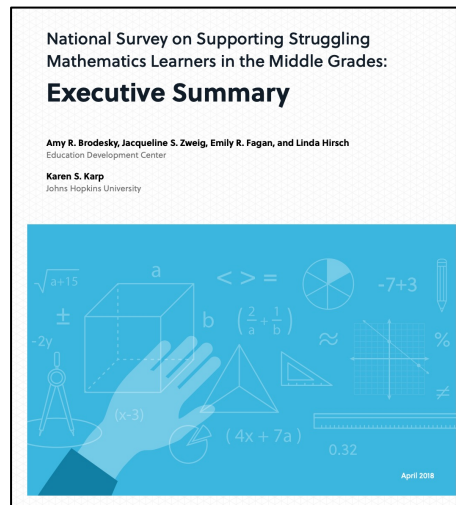
- ▣ Focus only on mathematics
- ▣ Designed for students who struggle with mathematics
- ▣ Are *not* separate special ed. math classes or general academic support

How have we studied math intervention at the middle grades?



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- **Review of Relevant Research**
- **Observations of Math Intervention Classes**
- **Interviews with Teachers and Leaders**
- **National Survey of 876 public schools (Grades 6-8)**
- **Professional Development Courses**



What did we learn?



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- **A lot of variation** in how schools are implementing math intervention
- **Many trade-offs** to scheduling and structuring classes – no perfect solution
- **Themes** emerged related to successful approaches and common challenges
- **Landscape of math intervention** is evolving over time

Middle grades students may need math intervention for different reasons:

- ❑ Prior difficulties with elementary math
- ❑ Content gets more abstract and pace increases
- ❑ Non-academic factors and stressors
- ❑ Learning differences and disabilities
- ❑ Interrupted learning due to pandemic
- ❑ Missing content due to changing districts



When students have persistent difficulties with math, they may..

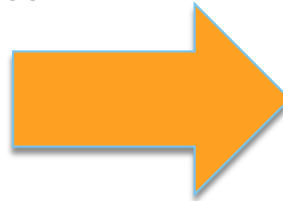
- ❑ Feel anxious about doing math
- ❑ Lack motivation
- ❑ Feel overwhelmed or frustrated
- ❑ Lack self-confidence
- ❑ Display learned helplessness
- ❑ Hide their difficulties
- ❑ Avoid doing math



Math Intervention can support students in making important shifts

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- Feel anxious about doing math
- Lack motivation
- Lack self-confidence
- Display learned helplessness
- Hide their difficulties
- Avoid doing math
- Feel overwhelmed



- **Feel Comfortable & Safe**
- **Gain Confidence**
- **Increase Motivation**
- **Engage, participate**
- **Ask questions**
- **Share thinking**
- **Feel empowered**





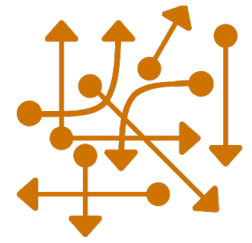
Suggestions for Starting the New School Year

1. Reaffirm Your Goals and Vision for Math Intervention

Math Intervention is an Opportunity for...

Please type an idea in chat.

Common Challenges



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- Unclear goals and expectations
- Competing demands

Suggestions

- Clarify what math intervention **is** and is **not**
- Build a shared understanding with colleagues
- Widely communicate goals and vision with students, families, and broader school community



Math Intervention Is

- focused instruction targeted to students' strengths and needs
- engaging, active, and appropriately challenging
-

Math Intervention Is Not

- a slower and louder repeat
- students passively doing worksheets
-

We created a JamBoard version of our PD activities for building a shared understanding math intervention. Sort and discuss goals with colleagues.

<https://go.edc.org/GoalsBoard>

Our Vision for Math Intervention Classes



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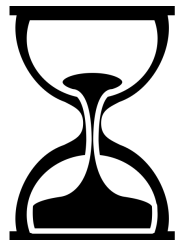
- ❑ Focused on high-priority math topics
- ❑ Tailored to students' strengths and difficulties
- ❑ Engaging, accessible math activities
- ❑ Emphasizes student communication
- ❑ High-levels of interaction
- ❑ Planned and proactive
- ❑ Provides support and scaffolding
- ❑ Supportive learning community



Suggestions for Starting the New School Year

2. Set Mathematics Content Priorities

**Too much content,
too little time**



Why is it important to set content priorities?

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Math Content > **Time for Intervention**

I feel overwhelmed

I feel rushed and frustrated

Math Content  **Time for Intervention**

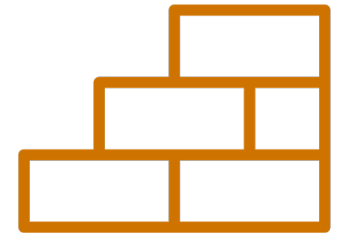
I feel empowered

I feel able to succeed

“My students have many gaps. It’s too much content to teach in the time we have.”

Consider reframing from ‘filling gaps’ to ‘building a strong foundation’ to support student success

Identify and build on students’ strengths



Central Questions



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1. Will you focus on prior-grade content, current, or a combination?
2. What specific topics will you focus on? When?
3. What topics will not be addressed?
4. To what extent will the scope and sequence align (or not align) with the core math class?

Clarify Goals for Addressing Content

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Will you use 1, 2, or 3 of these approaches?

A. Re-teach foundational content from prior grades to address unfinished learning and misconceptions

B. Provide concurrent support for grade-level content from general education math class

C. Pre-teach grade-level content in advance of general education math class

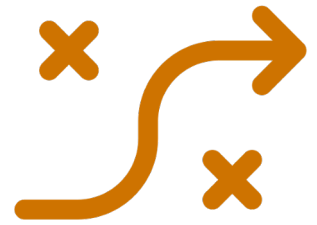
Suggestions



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- Start with grade-level focus standards and work backwards ([achievethecore.org](https://www.achievethecore.org))
- Identify critical prerequisites and common areas of difficulty
- Gather and examine assessment data
- Collaborate on setting content priorities -- Helpful to discuss and make these decisions with other teachers, coaches, and leaders
- Fit scope to the available class time/duration

Things to Avoid



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- ❑ Going too far back
- ❑ Spending too much time on low-priority content
- ❑ Setting expectations too low or pacing too slow
- ❑ Trying to cover all the grade level content

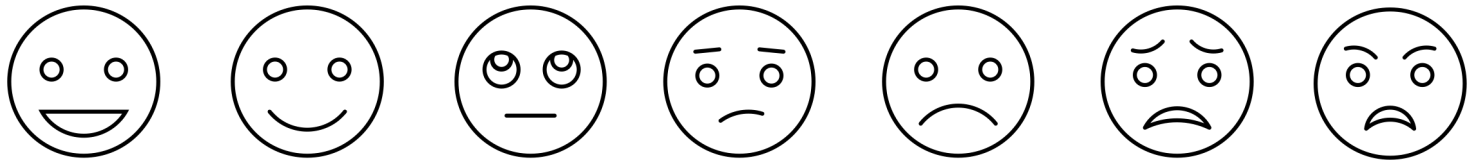


Suggestions for Starting the New School Year

3. Get Student Buy-In

Students Have Different Feelings about Starting Math Intervention

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Get Buy-In: Make intervention class feel like a new opportunity for learning

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Suggestions

- Different from core math class (not a repeat)
- Inviting classroom environment (or part of room)
- Different kinds of math activities
- Reinforce positive messages about learning math and making mistakes
- Build a supportive community of learners

Provide Opportunities for Students to Engage with Math and Experience Success



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- Activities with accessible entry points
 - ▣ Card sorts, kinesthetic activities, visual patterns, and games
- Instructional routines
 - ▣ Number Talks, Which One Doesn't Belong?
- Supports for communication and collaborative activities
 - ▣ Mini-Whiteboards
 - ▣ Roles and protocols

Please put in the Chat: What is an activity you like to use at the start of the year?

Make Connections to Students' Interests and Prior Math Experiences

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Gather information

- ▣ Give a survey to find out about students' interests and what they find helpful when learning math
- ▣ Conduct brief conferences or informal interviews to learn about students' math experiences and understanding

Personalize Math Tasks by incorporating:

- ▣ Topics that are familiar and appealing to students
- ▣ School and community contexts

What might students assume math intervention will be?

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- This may be students' first experience with math intervention
- May be unsure what they will do in math intervention
- May assume that the only purpose is support for their core math class

However, math intervention has goals that go beyond support for core math class.

Important to communicate clear messages about the relationship between the two classes.



Clarify for Students and Families:

Will intervention time be used for...

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- Help with homework for core math class?
- Preparation for upcoming quizzes/tests?
- Test corrections?
- Other assignments for core math class?

Homework Help in Intervention?

Perspective 1: *Reasons for Not Providing Homework Help*

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- Takes away time from focused lessons on high-priority content
- Uses intervention time in a more reactive way instead of a proactive, planful way
- Can be difficult to manage:
 - ▣ Homework assignments might differ among students
 - ▣ Homework problems vary in quality and purpose
 - ▣ Other options for students to get homework help may be more efficient and productive

Homework Help in Intervention?

Perspective 2: *Reasons for Providing Homework Help*

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- Can help students see value and get buy-in
- If intervention class meets 5 times per week, scheduling a short homework help time once or twice a week could work

Suggestions

- Select specific homework problems to focus on with the class
- Set expectations that students will work on the problems themselves before asking for help
- Set a specific amount of time for homework help so that it doesn't cut into other lesson activities



Suggestions for Starting the New School Year

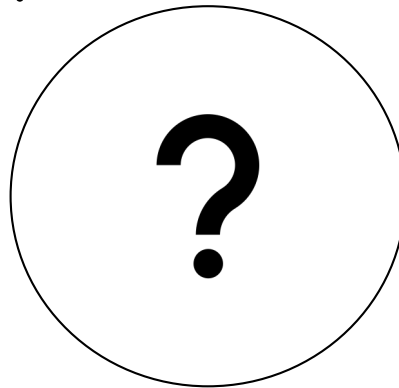
4. Structure Lessons to Make the Most of Math Intervention Time

For Students to Build Understanding...

they need to do math and talk about their ideas.

Think about:

- What is the **ideal** % of intervention class time devoted to students to **actively doing math**?
- What **structures and supports** do they need to be active math learners?



Structure Lessons to...

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- Have a *consistent* structure and learning routines so that students know what to expect
 - ▣ Reduces anxiety
 - ▣ Makes more efficient use of class time
 - ▣ Eases transitions between activities

- Use a mix of whole group, small group, partner, & independent work

- Add variety to maintain interest, such as game days

There isn't one best approach for structuring lessons.

Pacing Challenges: Balancing...

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- setting a relaxed, slower pace for intervention
while also
- setting expectations and accountability for students to be actively doing math throughout the class period
- building in flexibility to be responsive to students' needs to spend more time on a particular topic

Time Bandits: *Where is time typically lost in intervention lessons?*



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Start of class

- ❑ Some students arrive late
- ❑ Some students take a while to start working on a task
- ❑ Warm-ups can take too much time and cut into the main activity

Suggestions

- ❑ Expectations to get started doing math tasks right away
- ❑ Use a consistent format for a Do Now activity or warm-up
- ❑ Keep warm-up activities short
- ❑ Share an agenda with time allocations

Time Bandits: No Time for Wrap-Up



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Key Questions to Address in the Wrap-Up

- What important math have we been focusing on?
- What goals have we been working towards?

Suggestion: Use consistent *Sentence Starters and Frames*

Examples

- When I compare **fractions**, it is important to _____ because _____
- One important thing I learned about about **adding decimals** is _____
- **Using a number line** helped me to _____
- One success I had today was _____
- One challenge I had today was _____



³⁷Summary:

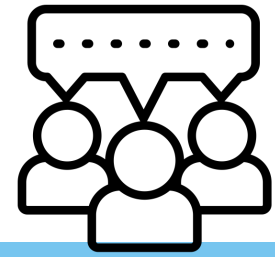
Four Suggestions for Starting the New School Year

1. Reaffirm goals and vision for math intervention
2. Set content priorities
3. Get buy-in from students
4. Structure lessons to make the most of class time



YOUR QUESTIONS

Ideas to Apply



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What's one idea from today's session that you want to apply in your practice?

Share an idea in the chat.

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