

Data-Driven Math Interventions

Grades 3-8

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Learning Services



VISION & MISSION

The Arkansas Department of Education is transforming Arkansas to lead the nation in **student-focused** education.

The Arkansas Department of Education provides leadership, support, and service to schools, districts, and communities so **every** student graduates prepared for college, career, and community engagement.

MATH VISION

Arkansas' vision for math is to ensure all students **understand** concepts, **use** procedures efficiently, and **apply** math through problem-solving. This is achieved through grade-level instruction that empowers students to take an active role in learning and master essential numeracy skills.



- Focus on what you can control or influence
- Assume positive intent
- Value different perspectives
- Make space and listen to all voices
- Seek solutions, not problems
- Challenge and be open to be challenged
- Zoom In on the work and Zoom Out to the bigger picture

Who is in the room?



Agenda:

- The State of Math Intervention in Grades 3–8
 - Align Intervention Instruction for Impact
 - Making Intervention Work: Systems that Deliver Results



The State of Math Intervention in Grades 3-8

Math Interventic

250

200

150

100

50

0

Accelerated Math
ALEKS
Apex Learning
BookTok

CoOP Math Intervention Cycle 7 SY 2025-2026

COOP LEA

COOP Name

Percentage of

Top 5

IXL

iReady

Reflex

None Listed

IM Support

Zearn

520000 OZARKS UNLIMITED RESOURCES EDUCATION SERVICE COOPERATIVE

1020000 DAWSON EDUCATION SERVICE COOPERATIVE

1520000 ARCH FORD EDUCATION SERVICE COOPERATIVE

2220000 SOUTHEAST ARKANSAS EDUCATION SERVICE COOPERATIVE

2420000 GUY FENTER EDUCATION SERVICE COOPERATIVE

2920000 SOUTHWEST ARKANSAS EDUCATION COOPERATIVE

3320000 NORTHCENTRAL ARKANSAS EDUCATION SERVICE COOPERATIVE

3520000 ARKANSAS RIVER EDUCATION SERVICE COOPERATIVE

3820000 NORTHEAST ARKANSAS EDUCATION COOPERATIVE

5220000 SOUTH CENTRAL SERVICE COOPERATIVE

5420000 GREAT RIVERS EDUCATION SERVICE COOPERATIVE

5620000 CROWLEY'S RIDGE EDUCATIONAL SERVICE COOPERATIVE

6720000 DEQUEEN MENA EDUCATION SERVICE COOPERATIVE

7221000 NORTHWEST ARKANSAS EDUCATION SERVICE COOPERATIVE

7320000 WILBUR D MILLS EDUCATION SERVICE COOPERATIVE

9999000 PULASKI COUNTY SCHOOLS

13.45%

16.41%

26.73%

16.43%

15.29%

15.31%

14.98%

17.06%

Explore the core components of effective math intervention



- Develop a clear understanding of a mathematics **intervention framework**.
- Apply **student data** to guide targeted mathematics intervention plans.
- Create **incremental intervention goals** that move students toward grade-level standards.
- Identify evidence-based mathematics **intervention practices** that are non-negotiable for effective intervention lessons.
- Use **progress monitoring** to inform ongoing instructional decisions and support student growth.

What are the expectations?

- What is the math intervention structure?
 - How are you identifying students who need interventions?
 - How are students' skills identified for interventions?
- Tier 2?
 - Tier 3?
 - Level 1?
 - Level 2?
 - High Quality Instructional Materials?
 - Supplementary Materials?
 - Online
 - State Grade 3 Diagnostic

What data identifies student's need?

Intention



How does data support math interventions?



- Effective mathematics intervention begins with a clear understanding of student needs.
- **Math diagnostics** provide actionable data that **identify specific skill** gaps, support targeted intervention planning, and ensure instructional decisions are grounded in evidence.
 - HQIM
 - Supplemental Programs
 - State Diagnostic
 - District or School Created
 - Intervention Program Diagnostic

Interventions should allow students the opportunity to access grade level instruction.

Data-Decision Checklist

Review current school/district diagnostic data. Check each item based on system-wide evidence. Base your responses strictly on evidence, not assumptions. If an item cannot be checked, note it as an opportunity for deeper analysis or adjustment.

Prompt: Are system decisions clearly aligned to what the data shows?

☐	1. Clear system-wide intervention expectations are identified across schools, classrooms, and student groups.
☐	2. Students requiring Tier 2 targeted support are consistently identified using diagnostic data .
☐	3. Students requiring Tier 3 intensive support are consistently identified using diagnostic data .
☐	4. Diagnostic data is used to establish consistent grouping practices based off key gaps and misconceptions.
☐	5. Data informs intervention learning goals, priorities, and resource allocation .
☐	6. Progress monitoring data indicates where adjustments are needed (schools, groups, or supports).
☐	7. There is evidence that supports are improving student outcomes across schools, classrooms, and student groups.

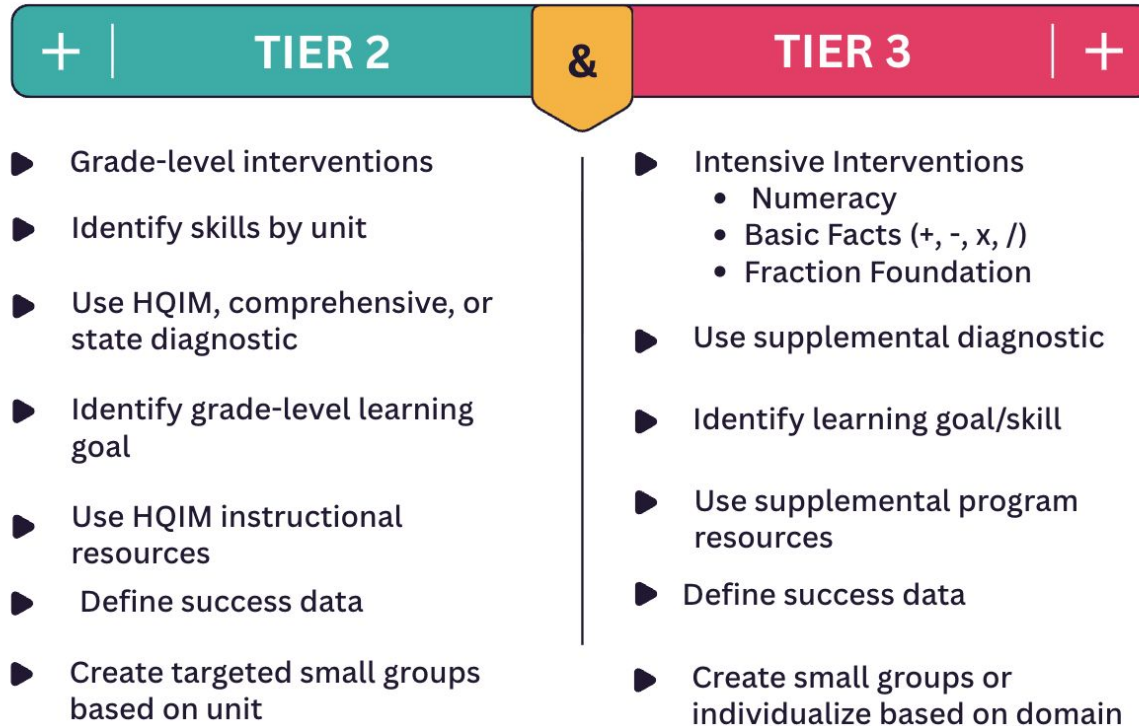
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Selecting appropriate diagnostics that support targeted instruction

INTERVENTION FRAMEWORK WHAT ARE YOUR DIAGNOSTIC GOALS?



Aligning interventions to standards progressions



Grade: 3

Framework: Tier 2

Diagnostic Assessment: State-Created

State Standards Alignment Progression:

- 2.NPV.6 - Partition circles and rectangles into two, three, or four equal shares, describing the shares using the words halves, thirds, and fourths (or quarters).
- 3.NPV.7 - Partition squares, regular hexagons, and equilateral triangles into parts with equal shares, explaining the shares of each part as a unit fraction of the whole. (Fractions include: denominators 2, 3, 4, 6, 8.)

Diagnostic Items:

Show a misconception around equal shares & unit fractions

Learning Goal:

In two weeks, students will partition shapes into 2, 3, or 4 equal shares and correctly describe the shares using the vocabulary halves, thirds, fourths with 80% accuracy on three consecutive progress monitoring checks.

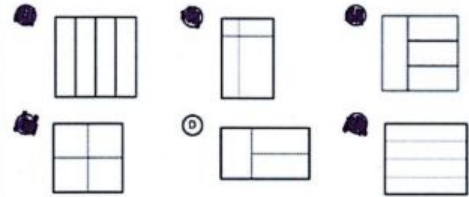
Student C

3rd Grade Diagnostic Items (2.NPV.6 → 3.NPV.7)

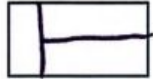
2.NPV.6 - Partition circles and rectangles into two, three, or four equal shares, describing the shares using the words halves, thirds, and fourths (or quarters).

3.NPV.7 - Partition squares, regular hexagons, and equilateral triangles into parts with equal shares, explaining the shares of each part as a unit fraction of the whole. (Fractions include: denominators 2, 3, 4, 6, 8.)

Select ALL the shapes that correctly show fourths.



Partition the rectangle below into thirds.



Luna cut a rectangle into 3 equal parts. What fraction of the whole is one part?

- ☐ A one third
- ☐ B one half
- ☐ C one fourth
- ☒ D one whole

Student Experience:

Tier 1:

The student experiences Tier 1 instruction focusing on fractions with their HQIM.

Tier 2 Small Group Setting:

After the Tier 1 Instruction, the student is pulled to a small group to address the partition standard, focusing on equal parts.

Tier 2 Resource: The teacher uses an activity from the previous grade level in the HQIM to build conceptual understanding.

Aligning interventions to standards progressions



Grade: 6

Framework: Tier 2

Diagnostic Assessment: State-Created

State Standards Alignment Progression:

- 5.CAR.2- Calculate whole number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, properties of operations, divisibility rules, and the relationship between multiplication and division.
- 6.NCC.8 - Divide multi-digit numbers fluently in real-world and mathematical problems.

Diagnostic Items: Show some inconsistent partial quotient understanding

Learning Goal: In three weeks, students will use representational strategies or partial quotients to divide up to four digits by single digit divisors, demonstrating 3/3 on 4 consecutive assessments.

Aligning interventions to HQIM instruction - Coherence

Student B

6th Grade Diagnostic Items (5.CAR.2 → 6.NCC.8)

5.CAR.2- Calculate whole number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, properties of operations, divisibility rules, and the relationship between multiplication and division.

6.NCC.8 - Divide multi-digit numbers fluently in real-world and mathematical problems.

$$280 \div 14 =$$

20

$$\begin{aligned} 14 \times 2 &= 28 \\ 28 \times 10 &= 280 \\ \downarrow \\ 2 \times 10 &= 20 \end{aligned}$$

$$2240 \div 35 =$$

138

$$100 + 10 + 10 + 10 + 2 + 2 + 4 = 138$$

$$\begin{array}{r} 35 \overline{) 2240} \quad 100 \\ \underline{3500} \\ 1340 \quad 10 \\ \underline{-350} \\ 990 \quad 10 \\ \underline{-350} \\ 640 \quad 10 \\ \underline{-350} \\ 290 \quad 2 \\ \underline{-70} \\ 220 \quad 2 \\ \underline{-70} \\ 150 \quad 4 \\ \underline{-140} \quad 4 \\ 10 \end{array}$$

A warehouse needs to ship 2,789 books to a store. They can only fit a maximum of 9 books in each box. How many boxes will they need to ship all the books?

(A) 310 boxes are needed to ship all the books.

(B) 309 boxes are needed to ship all the books.

(C) 390 boxes are needed to ship all the books.

(D) 389 boxes are needed to ship all the books.

$$\begin{array}{r} 9 \overline{) 2789} \quad 300 \\ \underline{-2700} \\ 89 \quad 9 \\ \underline{-81} \\ 8 \end{array}$$

$300 + 9 = 309 \text{ r } 8$

Student Experience:

Tier 1:

The student experiences Tier 1 instruction on division with their HQIM.

Tier 2 Small Group Setting:

After the Tier 1 Instruction, the student is pulled to a small group to address dividing with the partial quotients strategy using single-digit divisors.

Tier 2 Resource: The teacher uses 4th grade material from the HQIM to build consistent use of the partial quotient strategy.

Grade 3

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43

Grade 3

$$100 + 100 + 30 + 10 + 2$$

Grade 6

4 NC TB Lesson 7

Monitoring progress to inform instructional decisions

What evidence shows that interventions are effective?

1

Can the student demonstrate the skill by the end of the intervention lesson?



2

Does the student remember it the next day?



3

Can the student apply it?

Instructional **decisions** are based on **student evidence**!



If, **YES**- Great! The student shows understanding of the new skill.

If **NO**, - The intervention needs to access prerequisite skills and add **MORE** modeling.



If, **YES**- Practice, Practice, Practice!

If **NO**, - Revisit the intervention and add **MORE** modeling.



If, **YES**- Great! The student has mastered it.

If **NO**, - The student needs just in time feedback and questioning.

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MIPs: Strengthening current math intervention systems (grades 3–8)

How do we effectively communicate with parents to support student learning?

MIPs in ATLAS System

[Select Role](#) > [Dashboard Generator](#) > [Dashboard](#) > [Performance on Tests](#) > [District Performance on Tests](#)

Score, Performance and Points Earned on ATLAS Grade 5 Math Summative (2025-2026)

Filtered By **School:** All Schools | **Test Reasons:** 2025-2026 - ATLAS Summative |

Student	Student ID	Teacher Updates to MIP Status
State		
District		
School		
My Students		

1011202413

MIP Not Reviewed

ACTIONS

Math Intervention Plan

Quick Print

Progress Monitoring for Parent Communication

Does First need a Math Intervention Plan?

☒ Yes
 ☐ No

Evidence for Math Intervention Plan

☒ Student performed **Level 1** on Previous Year's ATLAS Summative Assessment
 ☐ Student performed **Level 2** on Previous Year's ATLAS Summative Assessment
 ☐ Student did not take Previous Year's ATLAS Summative Assessment
 ☐ Student IEP documentation

ATLAS Summative Results

Date	Test Name	Scale Score	Performance	Computation and Algebraic Reasoning	Geometry and Measurement & Data Analysis	Number and Place Value
04/03/2026	ATLAS Grade 3 Math Summative	1000 ± 11	Level 1	Below Mastery	Below Mastery	Below Mastery

Additional Assessment Results

Date	Teacher	Assessment Name	Skill	Score	Benchmark	Actions
4/16/2026	Nesmith, Jeffrey	Multiplying by building Arrays	Making since of multiplication Basic Fact Fluency- Building Arrays	8/10 80% Student mastered 2, 5, and 10s.	8 out of 10 Correct	
4/23/2026	Nesmith, Jeffrey	Derived Facts- Multiplying single digits by 6, 7, 8	Basic Fact Fluency - Distributive Property (break apart strategy)	6/10 60% Student mastered 6 and 7. Student struggled with factors of 8	8 out of 10 Correct	

Intervention Session Information

Date	Teacher	Skills	Goals	Progress Monitoring	Intervention	Frequency	Met Goal	Actions
4/16/2026	Nesmith, Jeffrey	Basic Fact Fluency - Factors (0-12)	Using grade-level materials, the student will fluently multiply basic facts from 0–10 with 90% accuracy within 3-5 seconds per fact on two consecutive progress monitoring checks.	Weekly focusing on Factors 6, 7, 8 Using strategies and properties from the HQIM.	Build understanding of the Distributive Property by modeling and connecting equations to area/array. Students practice Distributive Property shading area tiles. Student practices solving using the Distributive Property.	2 times per week	☐	

Identify streamlined tools and resources for immediate use



Diagnostics:

BOY Diagnostics Grades 3-8

Math Intervention Plans (IEPs) Support:

MIP→IEP Decision Tree

Standards Support Documents

- Grades K-2
- Grades 3-5
- Grades 6-8
- Fluency Support Document
- K-5 Math Standards Progressions



Learning Goals: Math Incremental Milestone Intervention Goals

Next Steps



Reflect and plan: Strengthening current math intervention systems (grades 3

Use your completed checklist to determine **next steps for data use and student support**. Revisit the checklist regularly to monitor **changes and impact over time**.

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The State of Math Intervention in Grades 3–8

- The What: Moving Beyond Coverage to Targeted, Data-Driven Support
 - ⇒ Take Action: Use Diagnostic Data to Identify Needs

From Intervention to Impact

- The What: Building a Student Experience that provides Consistency
 - ⇒ Take Action: Select an intervention framework and align interventions to Tier 1 instruction

Making Intervention Work: Systems that Deliver Results

- The What: Monitoring Progress to Drive Instructional Decisions
 - ⇒ Take Action: Implement Streamlined Tools to Strengthen Your Intervention System

FRAME
INTERVENTIONS AS
A **SYSTEM**, NOT A
PROGRAM!

Q & A



Thank You for Attending!

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