

# Evidence for Intervention

Outcomes for equitable  
decision-making



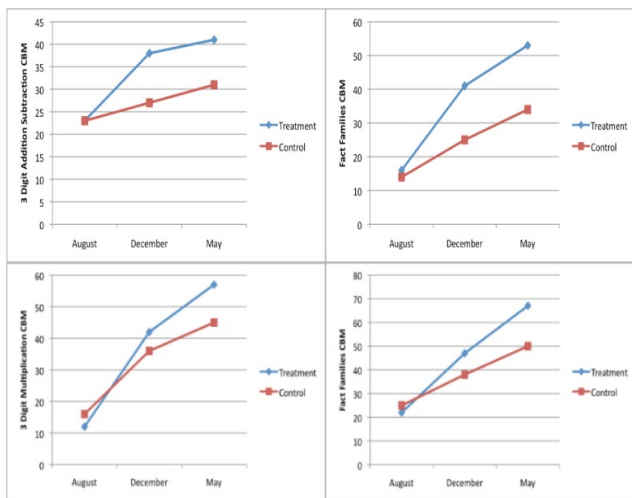
# Evidence for Intervention

**Dr. VanDerHeyden directed a districtwide randomized controlled trial with fourth- and fifth-grade students in 2012 to examine the effects of classwide intervention.**

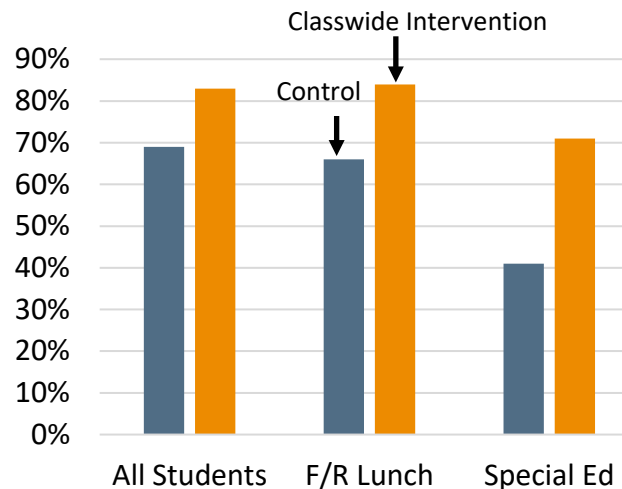
## **This study found:**

- Strong gains on CBMs and moderate to strong gains on the year-end test scores at grade four.
- Gains were stronger for students who had greater risk at baseline and integrity accounted for treatment outcomes in the treatment groups.

# Evidence for Intervention



Percent Proficient on Year-End Test



All <input type="checkbox"/>	Title	Study	Study Type	Participants	Design	Fidelity of Impl.	Measures (Targeted)	Measures (Broader)
<input type="checkbox"/>	Spring Math	Looney, VanDerHeyden, Martin, & Perrault (2016)	Group Design	●	◐	●	●	●
<input type="checkbox"/>	Spring Math	VanDerHeyden, McLaughlin, Algina, & Snyder (2012)	Group Design	●	●	●	●	●

Median ES = .68 CBMs

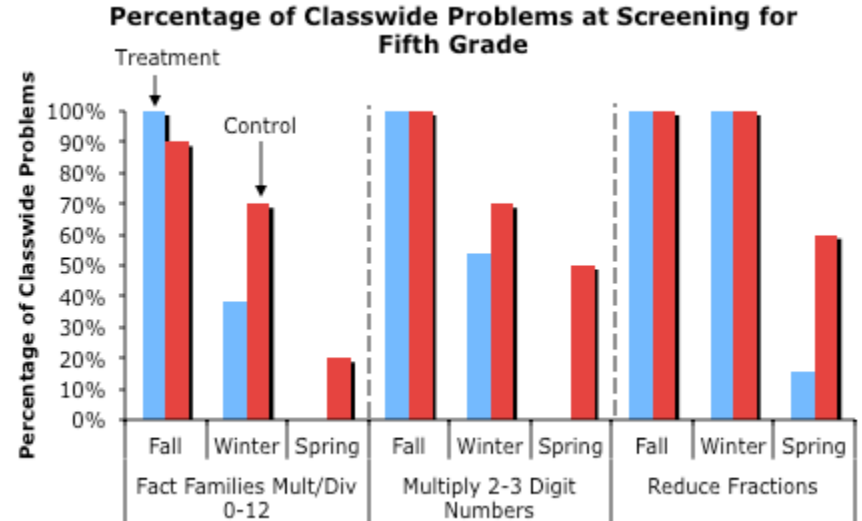
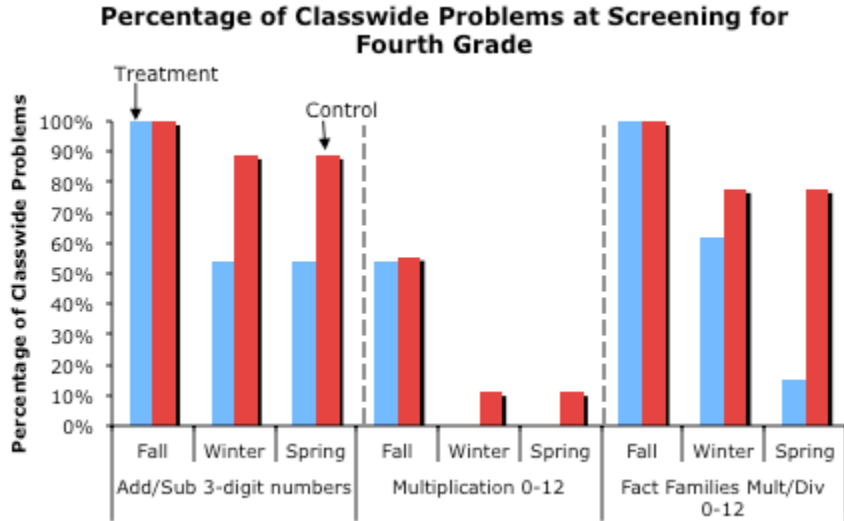
ES = .18 Gr 4

ES = .66 for at-risk Gr 4

ES = .29 Number & Ops Gr 4

ES = 1.00 Number & Ops Gr 4

# Evidence for Intervention



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**In a secondary analysis of the RCT data from the 2012 study, VanDerHeyden and Coddling (2015) examined the intervention effects on risk reduction and equity in the fourth-grade sample.**

## **They found:**

- Very strong risk reduction for all students and especially pronounced risk reduction where risk was elevated at baseline
- For every 7 students who participated in classwide intervention, 1 of those students was prevented from failing the year-end test of math.
- For students who scored below the 25<sup>th</sup> percentile on the preceding year-end test, the number needed to treat was 2, meaning for every two students who scored below the 25<sup>th</sup> percentile on the preceding year-end test and received classwide math intervention in the current year, one of those students was prevented from failing the current-year's test.

# Evidence for Intervention

	Absolute Risk Reduction	Number Needed to Treat
All students	15%	7
Students receiving Free/Reduced Lunch	18%	6
Students receiving Special Education Services	39%	3
Low-performing Students	44%	2

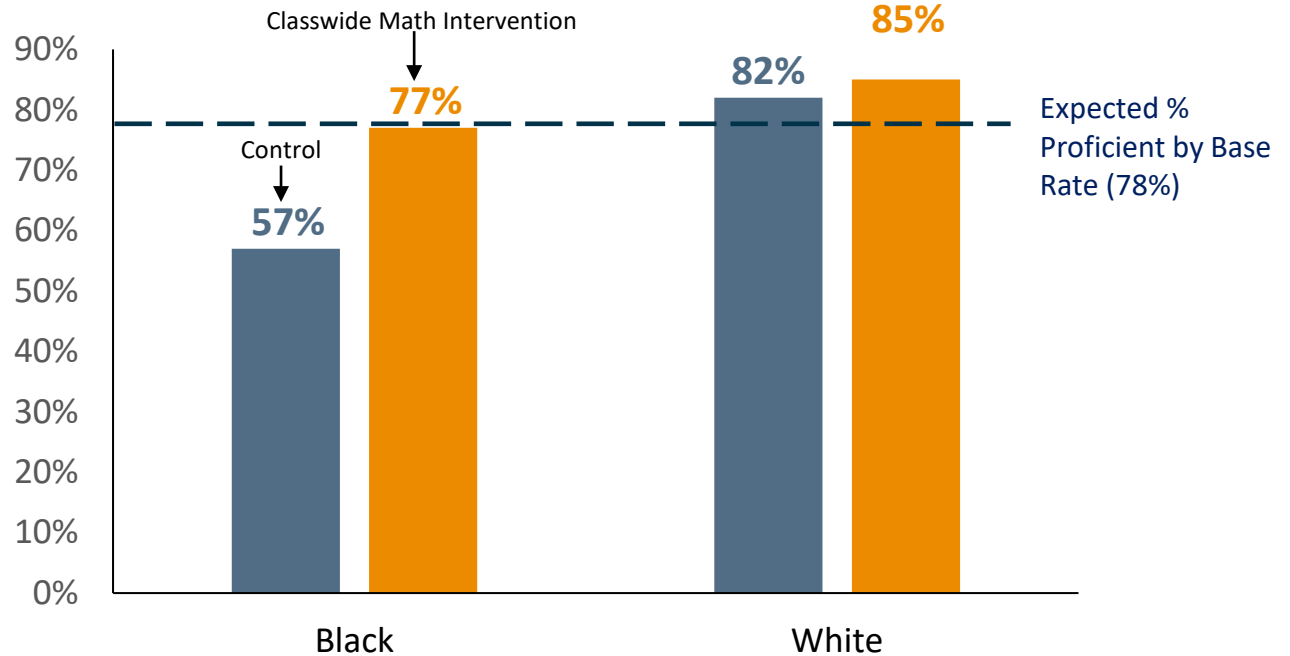
# Evidence for Intervention

- Strong equity effects were also found, favoring intervention
- Achievement was disproportionate by race at baseline
- In the intervention classes, achievement was proportionate by race following intervention
- In the control classes, achievement remained disproportionate by race, with Black students performing much lower than white students
- Important, because race was comparably disproportionate in both control and intervention classrooms before intervention, this study provided experimental evidence that intervention produces equitable achievement



# Evidence for Intervention

Percent Proficient by Race in Control & Intervention Groups





# Evidence for Intervention

- The SpringMath fall and winter screenings, and classwide intervention response data have been examined for bias and submitted to the NCII Tool's Chart.
- A series of binary logistic regression analyses were conducted for subgroups. Scoring below 20th percentile on AZ year-end test was the outcome criterion.
- Interaction terms were tested for each subgroup & screening scores for fall, winter, and classwide intervention.
- None of the interaction terms were significant at any grade level for sex, race, free or reduced lunch status, or special education status.
- These findings replicate all the earlier studies demonstrating screening and intervention is a more equitable basis for determining risk than teacher referral and other forms of assessment (i.e., year-end tests) alone.