MIND RESEARCH INSTITUTE

Brookfield Public School District

Who
What
When

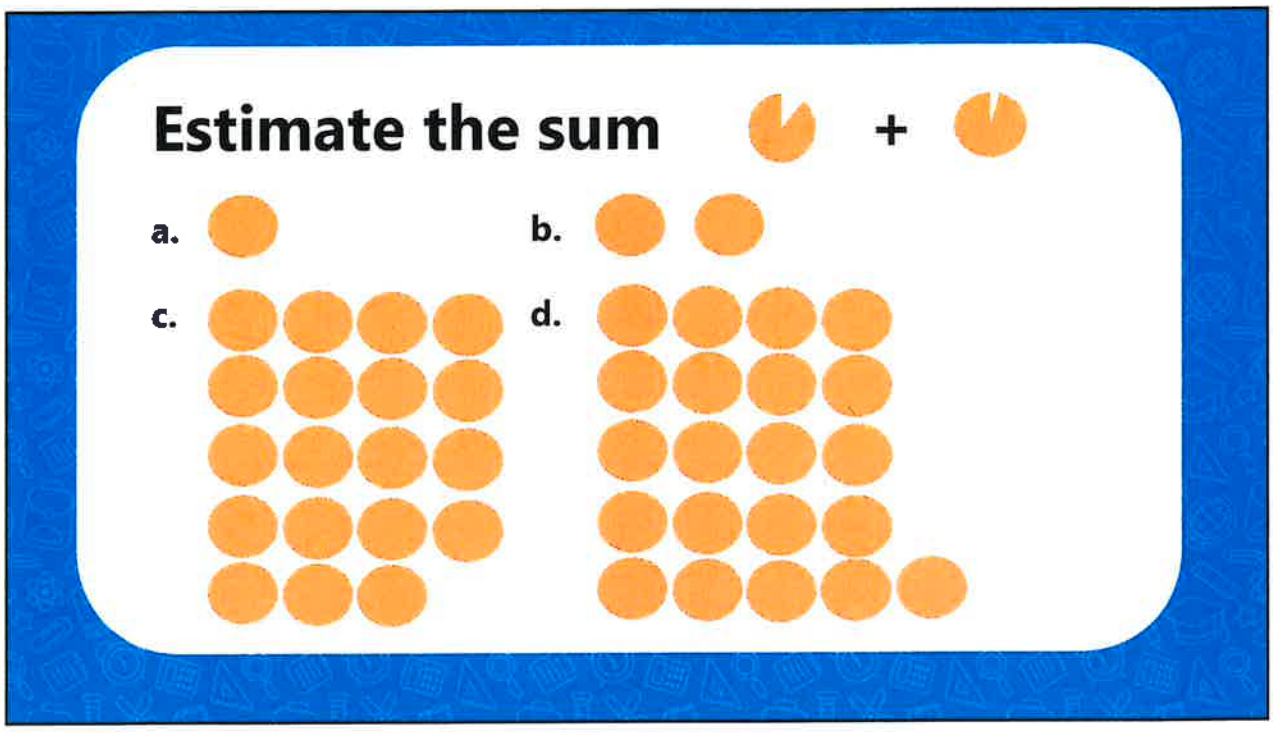
STMath
See the Math and Grow

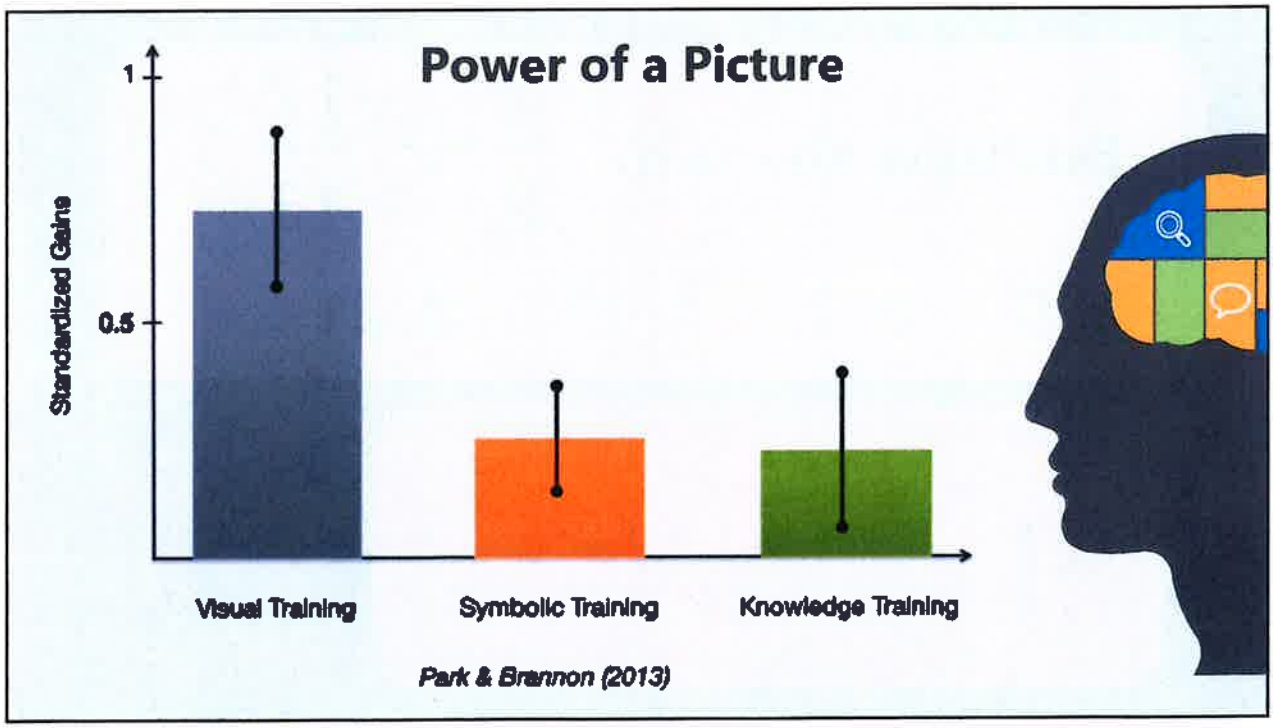
Estimate the sum $\frac{7}{8} + \frac{12}{13}$

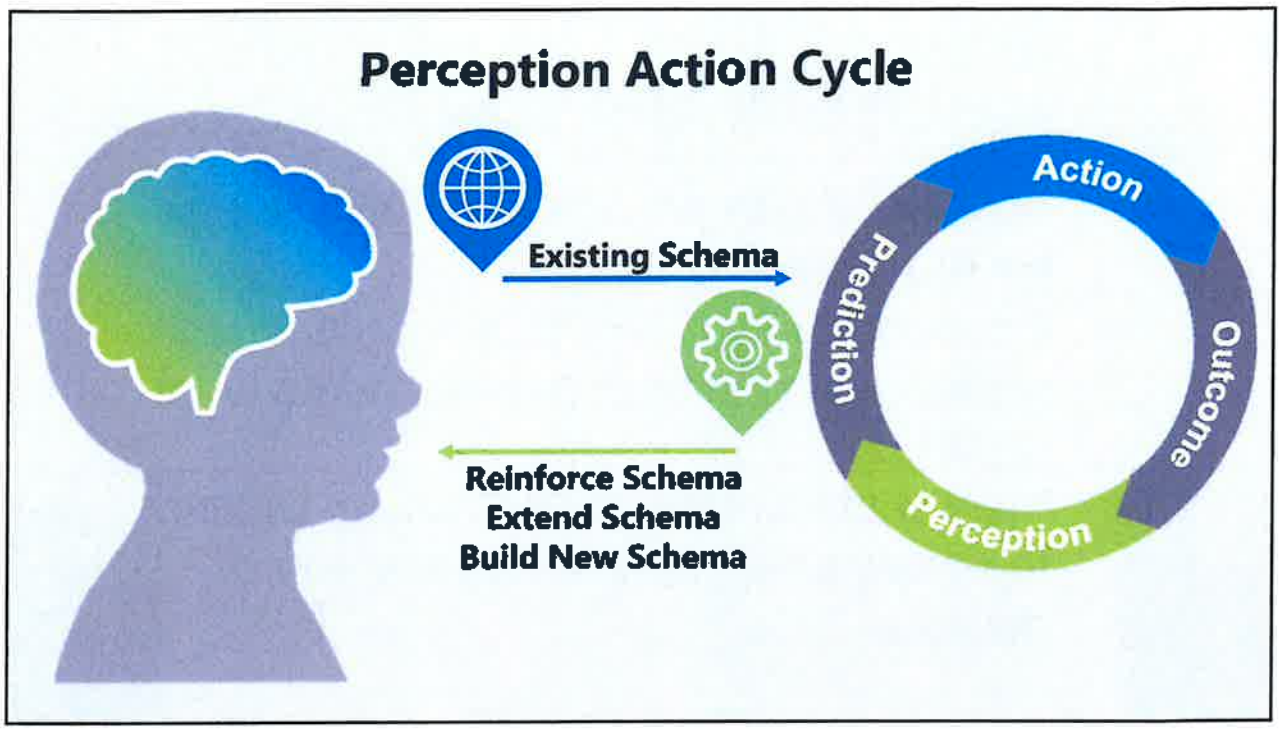
a. 1 **b. 2** c. 19 d. 21

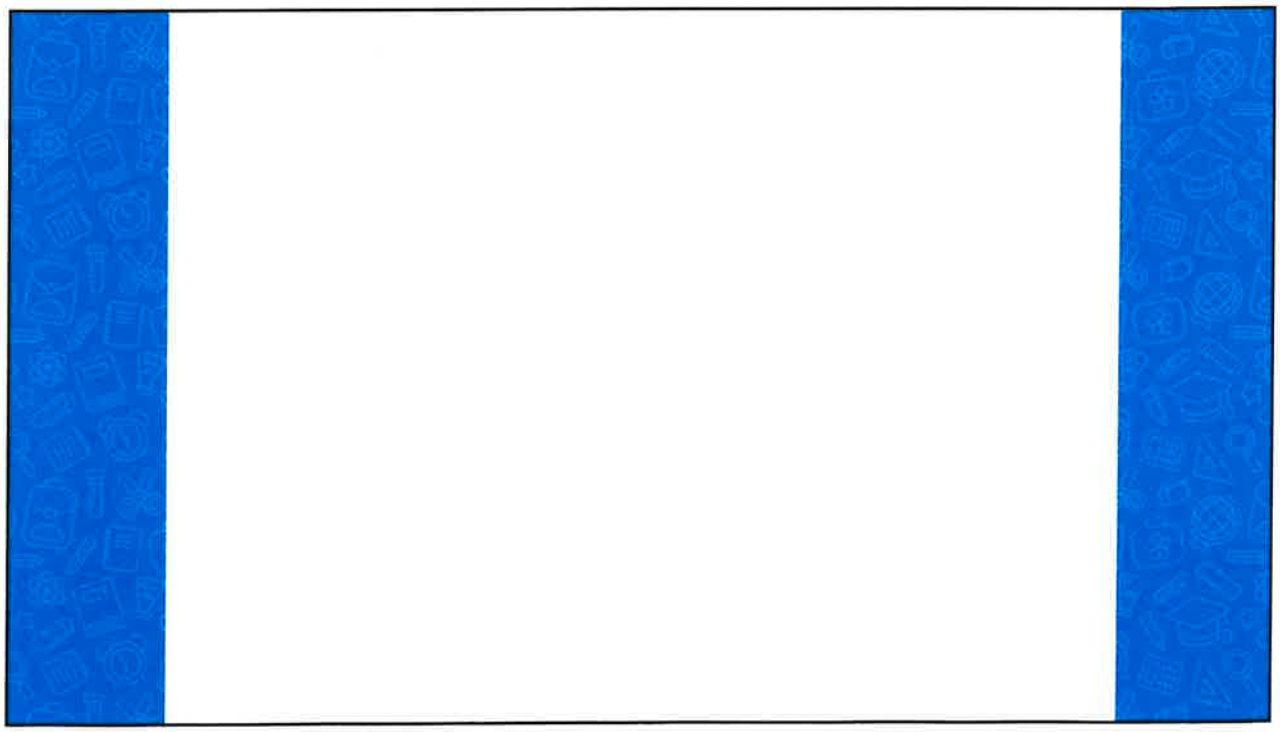
24%of eighth graders and 37% of twelfth graders chose the correct answer

Majority picked (c) or (d)


Estimate the sum
+
a.
b.
c.
d.


Power of a Picture
1
0.5
Standardized Gains
Visual Training
Symbolic Training
Knowledge Training
Park & Brannon (2013)


Perception Action Cycle
Existing Schema
Reinforce Schema
Extend Schema
Build New Schema
Action
Outcome
Perception
Prediction



Pilot for Spring 2019

- MIND willing to provide Pilot Opportunity for Brookfield
- If supported by CAPE/BOE would assess grades and numbers of classrooms to be included:
- Meet with Principals, Technology Director to review schedules and availability of devices

Implementation 2019-20

- Review of pilot data
- Teacher and Principal Survey
- Meet with Principals, Technology Director to review schedules and availability of devices for implementation
- Identify grade levels with priority for "roll-up" plan


MIND
RESEARCH INSTITUTE
STMath
See the Math and Grow

STMath.

Significant Results on an Unprecedented Scale

Independent education research firm WestEd recently published the largest ever national study evaluating a math edtech program on multiple state assessments. The results were especially significant at the 239 schools that used ST Math® above minimum thresholds (where more than 85% of students used the program and on average completed 50% of their grade-level content during the year). ST Math is a PreK-8 visual instructional program that builds a deep conceptual understanding of math through rigorous learning and creative problem solving.

42,000 STUDENTS

- **57%** Caucasian
- **24%** Latino
- **14%** African American
- **4%** Asian

Less than 1% Other

2013-2016 SCHOOL YEARS

11 STATE ASSESSMENTS

Including SBAC, PARCC, STAAR, FSA, NYSTP

14 STATES

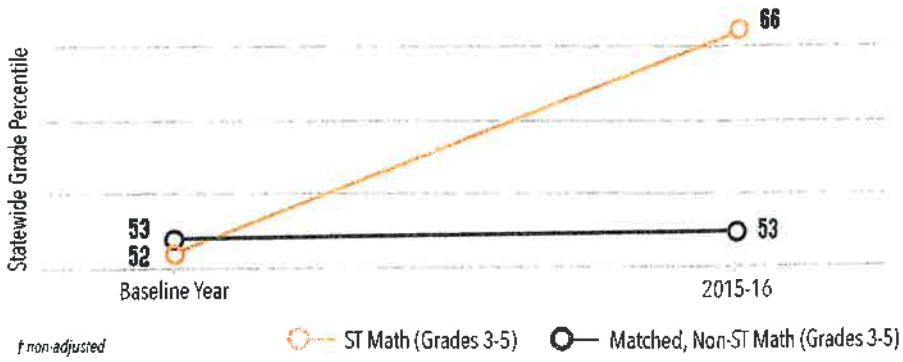
CA, CO, CT, FL, GA, IA, MI, MO, NJ, NV, NY, TX, VA, WI

239 SCHOOLS

Low performing, high performing, large, small, urban, suburban that consistently implemented ST Math

74 DISTRICTS

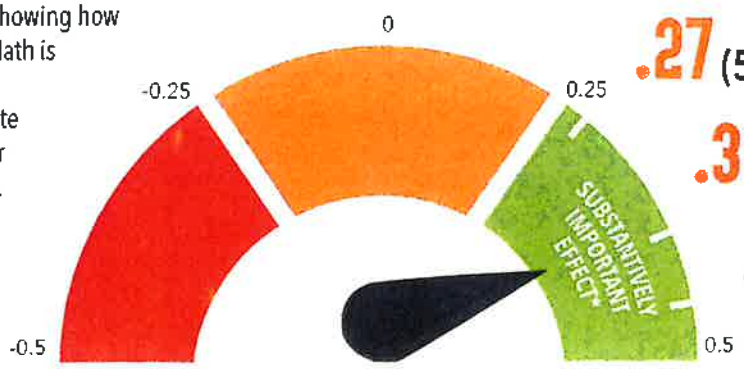
Growth in Statewide Ranking of Math Scores†



† non-adjusted

Effect Size on Percent of Students Proficient in Math

Effect size is a statistical term showing how meaningful the impact of ST Math is on percent of students scoring proficient or above on their state math tests compared to similar grades at non-ST Math schools.



.27 (5TH GRADE)

.38 (3RD GRADE)

.43 (4TH GRADE)

*According to the Federal What Works Clearinghouse

Unpacking the WestEd Study

What are the key findings?

Two outcomes were evaluated: average math scale scores and the proportion of students who were proficient or above in math. For both measures, grades that consistently implemented ST Math improved significantly more than similar grades that didn't use the program. For example, a school that initially ranked at the 50th percentile in its state and then consistently implemented ST Math, would, on average, get a statistically adjusted boost of 14 percentile points in statewide ranking. The effect size of all grades combined equalled 0.36, surpassing the Federal What Works Clearinghouse criteria for "substantively important" effect. This means, generally speaking, that using ST Math made a meaningful difference in schools' math achievement.

Which states were included in the study?

California, Colorado, Connecticut, Florida, Georgia, Iowa, Michigan, Missouri, New Jersey, Nevada, New York, Texas, Virginia, Wisconsin.

How was it possible to compare different state tests?

Since every state has its own standardized test, comparing test scores across state lines is like comparing apples to oranges. To normalize them, the researchers z-scored each school, grade by grade, within the state – essentially providing a statewide ranking. They then looked at how each grade at the school scored within their state before and after using ST Math, and compared it to how similar schools' scores changed within their state during the same timeframe. With all 14 states' math tests transformed to the same basis (statewide z-score) it was possible to aggregate and compare data across any state or assessment.

What grades and schools were included?

Rather than selecting specific districts or a single state, this study examined *all* grades 3, 4 and 5 at all schools using ST Math in 2015-16 in 36 states. Schools had to have used ST Math for 1 to 3 years and state grade-average standardized test scores had to be complete and available for those years.

What does it mean to consistently implement ST Math?

Schools were included in this group if at least 85% of students in the grade used ST Math, and if those students covered, on average, at least half of their ST Math grade-level content. As a general guideline, most students can complete their grade-level program if they use ST Math for about 20 minutes every weekday, or 90 minutes/week either at home or at school. The report also separately evaluated all 80,000 ST Math students regardless of implementation and found a significant effect size of 0.17.

How was the control group created?

Like other rigorous studies, WestEd carefully matched the treatment group (which used ST Math) and a similar control group (which did not use ST Math). To create the control group, WestEd statisticians matched each ST Math grade at a school to the most similar grade at another school in the same state based on size, ethnic composition, percent free and reduced lunch, and baseline year test performance. Control schools were not filtered based on math programs being used.

Expanding ST Math Evaluations

MIND Research Institute's internal evaluations of ST Math:

over **50** STUDIES in **20** STATES since 2009

WestEd's published independent evaluations of ST Math:

LAUSD in 2013

California in 2014

Nationwide in 2018

EN-180-180307

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ST Math is created by
MIND Research Institute
A neuroscience and education social benefit organization