8th Grade Math Network
January 27, 2019
Who’s In the Room?

• Name
• Title
• Organization

At your Tables –

What gives you hope for improving kids’ love of math in 2020?
Learn4Life is a collective impact effort focused on “raising the education bar” in Metro Atlanta.

Our mission:

To ensure that every child in our region becomes a thriving citizen who achieves success in school, career, and life.
Who We Are

Five Core Counties

K-12 Students

2017-2018
606,992

2010-2011
569,159

Non-white Change in Eight Years, 2010-2018
78% in 2018
54,000+

Low-Income Change in Eight Years, 2010-2018
59% in 2018
35,000+

Limited English Change in Eight Years, 2010-2018
16% in 2018
35,000+

Source: The Governor’s Office of Student Achievement (GOSA), 2010-2011 & 2017-2018, Enrollment by Subgroup Programs; Georgia Department of Education, FTE Enrollment by Grade Level(PK-12). Aggregated full-time equivalency (FTE) enrollment counts for school systems.
Our Theory of Action will focus our work for the next three years

What we do: We…

- Amplify bright spots
- Create shared understanding [of data]
- Engage partners

...in an environment of sustained trust, learning, and momentum
L4L Key Indicators

1. Kindergarten Readiness
2. 3rd Grade Reading Proficiency
3. 8th Grade Math Proficiency
4. High School Graduation
5. Post-Secondary Enrollment
6. Post-Secondary Completion
74% of the 2014 graduating class was enrolled in a post-secondary institution after 16 months.

27% of the 2012 graduating class had earned a post-secondary degree or credential by 2017.
## Post-Secondary Factor Analysis: Success Factors

### Enrollment

<table>
<thead>
<tr>
<th>Social Skills and Family Support</th>
<th>College-Going Culture</th>
<th>Academic Preparation</th>
<th>Exposure to College</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Entrance Exams</td>
<td>College Applications</td>
<td>Financial Support (FAFSA)</td>
<td>Good Fit and Match</td>
</tr>
</tbody>
</table>

### Completion

<table>
<thead>
<tr>
<th>Social and Academic Norms</th>
<th>College Enrollment</th>
<th>College Orientation</th>
<th>Academic Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Support</td>
<td>Appropriate Coursework</td>
<td>Career Exposure</td>
<td></td>
</tr>
</tbody>
</table>
Counseling Support is Limited in HS

Georgia's counselor to student ratio is 1 to 466, about 38 min per student per year (2019).

Selected Post-Sec Bright Spots

- Financial Support (FAFSA)
- College-Going Culture
- Academic Preparation
The Work of the Math CAN
44% of children are proficient in math by the end of eighth grade.
8th Grade Math Proficiency Factors

- Access to Rigorous Courses
- Gender Expectations
- Racial Expectations
- School Culture
- Relevant Curriculum
- Interventions for Struggling Learners
- Teacher Effectiveness
- Academic Preparation
- Access to Appropriate Technology
- Math Anxiety
- Language and Literacy Skills
- Use of Assessment Data

Learn4Life
Framework to Identify Bright Spots

Key Factors

Interventions for Struggling Learners

School Culture

Teacher Effectiveness

What's Working?

Leadership Council Criteria

Selected Strategies

Bright Spots to Scale

Where are things working?
Conducted School Visits to High Performers

Source: GOSA, 2016-2017 EOG Georgia Milestones Report & Enrollment by Subgroup Programs

Selected Schools
- Drew Charter School - Atlanta Public Schools
- Rex Mill Middle School - Clayton County
- Fantastic Freedom MS - DeKalb County

(*Tapp Middle School - Cobb County)
Factors led to bright spots

- Teacher Effectiveness
- School Culture
- Interventions for Struggling Learners
Program Model

What
• Fleet of mobile maker spaces that provides STEM learning to students, and builds capacity in teachers

Three Models
1. Engagement: 1-5 days
2. Impact: about 20 days
3. Sustaining: multi-year
Evidence of success

- Of 8\textsuperscript{th} graders who participate…
  - 87% show non-cognitive gains
  - 82% show applied STEM skills improvement
  - 70% show improved confidence to choose a STEM career
School certification

What is it?
Certified schools foster creativity and innovative thinking in all students.

Steps to certification
1. Learn about STEM/STEAM
2. Visit certified school
3. Implement for at least 2 years
4. Complete self-assessment
5. Schedule a pre-visit
6. Adjustments and continual growth
7. Complete the application
8. Site visit
9. Certification
Evidence of success

Improves outcomes
GA middle schools holding STEM or STEAM certification show positive gains in mathematics proficiency.
Work of the Change Action Network

- Amplify bright spots
- Create shared understanding [of data]
- Engage partners

…in an environment of sustained trust, learning, and momentum

- Eliminate barriers to scale proven solutions
- Use data as a flashlight
- Adopt practices that help achieve your goals
- Apply these protocols to all of our work
Reporting tools ("A3s") frame and guide our work

Reporting Tool

1. Results

- Community Level Outcome: 8th Grade Mathematics
- Result Statement: All children in metro Atlanta will master 8th grade standards.
- Indicator: % of 8th graders who are proficient in grade-level mathematics
- Measurement Tool: Georgia Milestones

2. Current Conditions/Baselines

- Percent of 8th Grade Students Proficient and Above at Math

<table>
<thead>
<tr>
<th>Year</th>
<th>All Students</th>
<th>Economically Disadvantaged</th>
<th>Black</th>
<th>Hispanic</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-2018</td>
<td>48%</td>
<td>28%</td>
<td>55%</td>
<td>38%</td>
<td>55%</td>
</tr>
<tr>
<td>2018-2019</td>
<td>50%</td>
<td>29%</td>
<td>57%</td>
<td>39%</td>
<td>57%</td>
</tr>
</tbody>
</table>

3. Target(s)

- Global Target: Increase 8th grade proficiency from 44% (X) to 55% (Y) by 2022. (Measure: Georgia Milestones)
- SMART Target: Increase 8th grade proficiency of economically disadvantaged students from 28% (X) to 36% (Y) by June 2022. (Measure: Georgia Milestones)

4. Factor Analysis (Story Behind the Baselines)

- The key factors that impact 8th-grade proficiency are:
  - Language and literacy skills
  - Academic preparation
  - Access to rigorous courses
  - Teacher effectiveness
  - School culture
  - Use of assessment data

- Data from the district's network is focused on:
  - Interventions for struggling students
  - Teacher effectiveness
  - School culture

5. Interventions/Strategies

<table>
<thead>
<tr>
<th>Key Factor</th>
<th>Measurement</th>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interventions for Struggling Students</td>
<td>% proficient LEAP students</td>
<td>Improve student engagement through expansion of STEAM Truck</td>
</tr>
<tr>
<td>% proficient SWD students</td>
<td># of professional development courses, # of mentored teachers, # of years of experience, Test scores by standard, Student milestones and scores by subgroup</td>
<td></td>
</tr>
<tr>
<td>% of 1% who became 2% and 2% who became 3%</td>
<td>Develop SMART/STEM professional development plan through STEM Certification process</td>
<td></td>
</tr>
</tbody>
</table>


- Key Interventions: Email, Email Update, Do
- Plan to scale STEAM Truck

7. Status (Tracking Interventions Above)

- Measure Progress of STEAM Truck
- Measure Expansion of Certification

8. Action Commitments

- Key: Next Steps

- Plan to scale STEAM Truck
Section 2: we are determining the baseline # of schools in the certification pipeline.
Today’s Activity

Which metro Atlanta middle schools are in the certification pipeline, and where are they in the process?

• *Context*: Schools self-identify as in-process

• *Importance*: We can provide support if we can name the schools and their needs
The process to scale certification

The goal is to identify which middle schools are in the certification pipeline and where are they in the process.

1. Determine which schools are in the certification pipeline
2. Survey in process schools, and place in stages
3. Select key, challenging attributes of certification
4. Identify solutions to common challenges to support schools

To identify common challenges schools face in certification to focus our support.
Today’s Activity

• Review the DOE’s STEM continuum.

• With a partner, choose between options A and B (on your blue handout) for how we should survey schools.

• Share out whole group to reach network consensus.
Next Steps

1. Determine which schools are in the certification pipeline
2. Survey in process schools, and place in stages
3. Select key, challenging attributes of certification
4. Identify solutions to common challenges to support schools

- ✔
- In process
- Next meeting
- Learn4Life
Previous Work

Last meeting, we helped identify which middle schools STE(A)M Truck should target for 2020 programming

• **Context**: ST is using the United Way’s Child Well-Being Index as its data source for targeting schools for expansion

• **Importance**: ST can impact 8th grade math outcomes by working with middle school students
Prioritization of Key Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th Grade Math</td>
<td>39</td>
</tr>
<tr>
<td>3rd Grade Reading</td>
<td>13</td>
</tr>
<tr>
<td>High School Graduation</td>
<td>9</td>
</tr>
<tr>
<td>Composite Family Score</td>
<td>8</td>
</tr>
<tr>
<td>Adults - No Diploma</td>
<td>6</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5</td>
</tr>
<tr>
<td>Children in poverty</td>
<td>5</td>
</tr>
<tr>
<td>Family Income</td>
<td>4</td>
</tr>
<tr>
<td>Housing Cost</td>
<td>3</td>
</tr>
<tr>
<td>Non cert math teachers</td>
<td>3</td>
</tr>
<tr>
<td>Teacher rated ineffective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
</tr>
</tbody>
</table>
Section 5: building strategies for ST’s value proposition by addressing schools’ challenges to STEM integration.
STE(A)M Truck aims for school-wide change

• ST builds staff capacity for experiential learning that continues after ST drives away.

• As ST expands into more middle schools, its impact will be stronger if it creates long-term changes to whole-school culture.
Today’s Activity

Key Question
• What factors within schools facilitate transformational shifts in STEM learning culture?

Why this matters
• Culture change is necessary for STEM integration in schools
• Change management is hard
The process to scale school-wide change

1. Identify the general challenges to change management
2. STE(A)M Truck identifies specific challenges to STEM integration
3. Identify solutions to schools’ challenges in STEM integration
4. Implement and study solutions
Identify challenges to change management

On 3 separate post-it notes, copy from the article what stood out to you:

• A word
• A phrase
• A sentence
Identify Themes

• Discuss your words, phrases, and sentences with your small group
• Synthesize your findings into themes
• Share out themes with the whole group that answer the question:
  ➢ “A key challenge to change management is…”
Apply Your Knowledge of Challenges in STEM

• On your yellow sheet, list the top challenges you have experienced in STEM integration efforts

• STE(A)M Truck will incorporate your perspectives as they identify the challenges to STEM integration they face
Next Steps

1. Identify the general challenges to change management
2. ST identifies specific challenges to STEM integration
3. Identify solutions to schools’ challenges in STEM integration
4. Implement and study solutions

In process
Next meeting
L4L’s Math Network is Engaged!

In Review…

Upcoming…

• Atlanta Science Festival
  o March 6-21
  o 100 events for kids and adults at multiple venues across metro Atlanta
  o Exploration Expo grand finale at Piedmont Park on March 21
  o AtlantaScienceFestival.org
Network Next Steps

Survey – please complete now

Upcoming meetings:
• Thursday, March 12
• Thursday, May 28
• State of Education in Metro Atlanta, May 11

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