Data for Decision Making:

Actions for Participants of Leading for School Improvement Institute and Promising Principals Academy

July 26, 2018

Office of Leadership Development and School Improvement
Session Objectives and a Goal

By the end of this introductory session into data decision making, we will have:

- Examined grade level mock data
- Considered possible reasons or causes for student performance
- Shared ideas on how to involve stakeholders
- Considered an evidence-based solution
- Used a method for setting data-informed goals

Our Goal:
To provide you with resources and an opportunity to borrow/lend expertise to others in order to build our collective capacity.
Session Essential Questions:

1. How do you personalize data for audience and for purpose?
2. How would you involve internal and external stakeholders in the process?
3. How can data be used in making school-wide decisions?
4. What best practices could be incorporated to encourage a data-informed culture?
“Change happens at the speed of trust”
Key Calendar Dates for Reporting:

What You Can Expect

- **Final State Summative File** (including growth) by July 27th
- **Reports posted in PearsonAccess next** by July 27th
  - Individual Student Reports (ISR)
  - District Summary Reports
  - Student Roster Reports
- **Individual Student Report (ISR) Shipment to Districts**
  - between 7/31/18-8/17/18
- **Optional Reports posted in PearsonAccess next** by August 17th
  - Performance Level Summary Reports
  - Evidence Statement Analysis Reports
  - Content Standards Roster Reports
- **Data Management Reporting System (DMRS) populated with**
  - Fall and Spring Block PARCC data between 8/27/18-8/31/18
Data Literate and Assessment-Literate

A Reason for Distinction

Data Literacy:

A data-literate educator possesses the knowledge and skills to access, interpret, act on, and communicate about the different types and sources of data to support student success.

Assessment Literacy

An assessment-literate educator typically has specific skill sets:

- shows the skills of a data-literate educator;
- creates and/or select high-quality assessments
- integrates practices and assessment results into action;
- communicates effectively and accurately
- gathers information to make education-related decisions

Sources:

Teacher Data Literacy: It’s About Time. Data Quality Campaign, February 2014.
Data Literacy: What it is and How it Differs from Assessment Literacy, NWEA, September 2014.
Examine Data Set: Recognize Assumptions

- Examine grade level mock data
- Consider possible reasons or causes for student performance
- Share ideas on how to involve stakeholders
- Use a method for setting data-informed goals
- Consider an evidence-based solution
Data Dialogues

- Examined grade level mock data
- **Consider possible reasons or causes for student performance**
- Share ideas on how to involve stakeholders
- Use a method for setting data-informed goals
- Consider an evidence-based solution

**Directions for Group Work:**

1. Select question stems to guide decision making.
2. Generate possible explanations of what you observe in the data.
3. What kinds of factors might be impacting student achievement?
4. Propose solutions/responses
5. Discuss possible data needed to implement a solution.
“An equitable leader should use teams of staff, who are closest to the student achievement need, to collaboratively identify the problem and engage in root cause analysis.”
Use Methods to Identify Causes or Reasons

Why is the Washington Monument deteriorating?
- Because of the strong chemicals needed to clean it

Why are strong chemicals needed to clean it?
- They are used to remove heavy droppings from birds

Why are there a lot of bird droppings?
- There are a lot of spiders and birds eat spiders

Why are there a lot of spiders?
- There are a lot of gnats for the spiders to feed on

Why are there a lot of gnats?
- The lights were turned on at dusk which attracted the gnats

The causes were eliminated when the lights were turned on after dusk
Finding root causes could:

→ lead to causes or reasons for student performance or behaviors
→ prevent practitioners and leaders from making assumptions about students and staff which could result in the inability to determine actual root cause effective solutions
→ result in an equitable practice

source: Rel Mid-Atlantic, 2014 Root Cause Analysis, webinar
Evidence-Based Solutions: Best Practices

- Examined grade level mock data
- Considered possible reasons or causes for student performance
- Shared ideas on how to involve stakeholders
- **Consider an evidence-based solution**
- Use a method for setting data-informed goals

Offers 5 recommendations to improve mathematical problem solving in grades 4 through 8
## A Goal Setting Method: R-A-S-C-I

<table>
<thead>
<tr>
<th>Evidence-based solution</th>
<th>Responsible “The Doers” Person(s) responsible</th>
<th>Accountable “The buck stops here” Who is ultimately accountable for results</th>
<th>Support “The helper” Supports those responsible</th>
<th>Consult “In the Loop” Anyone who can be consulted as a resource/talent/skill</th>
<th>Inform “Tell me” People who need to know about decision/solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teach students how to use visual representations through job-embedded Professional Development</td>
<td>7th grade teachers students</td>
<td>Principal Assistant Principal</td>
<td>-Department chair/teacher leader -central office math office -AP</td>
<td>-Math resource teacher/Department Chair -business partners to demo how math can be used in real-world via manipulatives</td>
<td>-7th grade students -parents</td>
</tr>
<tr>
<td>Timeline and Milestones</td>
<td>ensures bi weekly planning meeting to study student work/reflections</td>
<td>data report due on-- interim/formative data:</td>
<td>-conduct walk-through -provide timely feedback -facilitates peer visits opposite weeks</td>
<td>meet with principal and teacher leader once a month at Steering meeting</td>
<td>students provide feedback to teachers write self-assessment before/after</td>
</tr>
</tbody>
</table>
Putting the Solution to the Test

Improve students’ ability to respond to word problems school-wide

Students are able to accurately respond to math word problems using academic and domain-specific vocabulary in writing.

For 7th grade only, incorporate---- for one cycle, measure, revise, and repeat...

What is the timeline? 30-60-90 days

What is the data to determine impact?
“Change happens at the speed of trust”
Session Objectives and a Goal

By the end of this session into data resources, we will have:

- Explain Maryland’s Comprehensive Assessment Program under ESSA;
- Describe the types of differentiated collaborative partnerships based on needs;
- Connect Improvement Science practice to the impact on teacher and student performance;
- Demonstrate a change in mindset in using learning data

Our Goal:
To provide you with resources to build your on state data and reporting.
Student Performance under ESSA
To reach the State goal of reducing the number of non-proficient students by half by 2030, we will:

- provide standard reporting for aggregated and disaggregated for all Maryland State Assessments (ELA, Mathematics, Science);
- provide evidence-based interventions and supports to 24 school systems;
- establish baseline cut scores for 2016/17 English Language Arts and Mathematics assessments;
- determine different baselines for each student group beginning SY 2018-19

Non-proficient means students who did not score in the “Met/Exceeds” Expectations in performance on grade-level standards
Reporting Standards At-a-Glance

1. Student Level Analysis
2. Item Level Analysis by Evidence Statement and Standards
3. Student Level Analysis
4. Item Level Analysis by Evidence Statement and Standards
5. Student Level Analysis
### Reporting Standard At-a-Glance

<table>
<thead>
<tr>
<th>Levels of Reporting (Multi-State)</th>
<th>Data is Reported by...</th>
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</thead>
<tbody>
<tr>
<td>State</td>
<td>★ Performance Levels with scale scores</td>
</tr>
<tr>
<td></td>
<td>★ Standards shown in Evidence Tables for: Maryland College- and Career-Ready in ELA and Math</td>
</tr>
<tr>
<td></td>
<td>★ Next Generation Science Standards</td>
</tr>
<tr>
<td></td>
<td>★ Maryland Standards for Social Studies</td>
</tr>
<tr>
<td></td>
<td>★ Item Analysis by percent correct</td>
</tr>
<tr>
<td></td>
<td>★ Student Groups</td>
</tr>
<tr>
<td></td>
<td>★ Student Growth</td>
</tr>
<tr>
<td>District</td>
<td>★ Individual Student Report</td>
</tr>
<tr>
<td>School</td>
<td>★ Individual Student Report</td>
</tr>
</tbody>
</table>

[Image: Maryland State Department of Education - Equity and Excellence]
The Golden Circle

Start from the Why, and work your way down.

WHY
The single purpose, cause or belief that serves as the unifying, driving and inspiring force for any individual or organization.

HOW
Written as verbs as they are actions to be performed and not just inactionable values to be admired, e.g. Do the right thing vs. Integrity.

WHAT
Everything tangible an organization says or does. Everything outsiders can see, hear or experience, e.g. products, services, marketing.
Developing the Data Culture

Educators are here...
- Professional autonomy
- Knowledge delivery
- Externally mandated improvement
- Quick fixes and short term solutions

But need to be here
- Collaborative practice
- Knowledge construction
- Internally motivated improvement
- Continuous growth
Data Use for Instructional Decision Making

In order for student data and data systems to have a **positive influence** on student learning, teachers not only need to locate, analyze, and interpret data, but also to plan and provide differentiated instruction through techniques such as individualized learning plans, flexible grouping strategies, and alternative instructional approaches geared to different student profiles.

-U.S. Department of Education
Increasing Data Literacy: A Differentiated Approach

<table>
<thead>
<tr>
<th>Data-focused</th>
<th>Tiered Support</th>
<th>Workshops</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Static and dynamic reports</td>
<td>- Comfort level</td>
<td>- Facilitated end-to-end best practice data use</td>
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<tr>
<td></td>
<td>- Capacity-building</td>
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</table>

<table>
<thead>
<tr>
<th>Hybrid Support Model</th>
<th>Change in Plan</th>
<th>Gradual Release</th>
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<tbody>
<tr>
<td>- in-person</td>
<td>- data-informed</td>
<td>- stakeholders adopted and adapted a training model</td>
</tr>
<tr>
<td>- Webinars</td>
<td>- evidence-based</td>
<td></td>
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<tr>
<td>- Desktop</td>
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</tbody>
</table>

**WHAT**
Coaching Approach

District, School and Student level Data, Subgroup Data, Item Analysis using Evidence Statements

Curriculum, Instruction, Framework, Formative Assessment, Data, and Reflection

Use data reports to review evidence tables. Use student performance and mastery of standards.

Review of the standards and determine what it looks like in the curriculum framework and instruction

Assessment Data

Evidence Tables

Instructional Alignment

Standards and Frameworks
## Performance Level Example

### Static Report

Consider the Audience:

- **Performance Level**
- **Student Group**
- **Percent Correct**
- **Average Scale Score**
Strategic Use of Static and Dynamic Reports

Dynamic Reports

Static Reports

https://parcc-assessment.org/released-items/
Task Type I - Machine Scored 1 or 2 points

Task Type II - Addresses Sub-claim C - Reasoning 3 or 4 points

Task Type III - Addresses Sub-claim D - Modeling 3 or 6 points

Need to know:

Math item counts per form*

<table>
<thead>
<tr>
<th>Items Type</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Algebra I</th>
<th>Math I</th>
<th>Geometry</th>
<th>Math II</th>
<th>Alg</th>
<th>Math III</th>
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<tbody>
<tr>
<td>Type I 1 Point</td>
<td>32</td>
<td>26</td>
<td>26</td>
<td>24</td>
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<td>19</td>
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<tr>
<td>Type I 2 Point</td>
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<td>6</td>
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<tr>
<td>Type I 3 Point</td>
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<td>Type II 3 Point</td>
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<tr>
<td>Type III 1 Point</td>
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<td>TOTAL Type I</td>
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*The assessment will also include e items, which will not be included in this table. = 66 points possible
Digging Deeper into Data: Using Released Tasks

Released Tasks Available for:

- 2014-15
- 2015-16
- 2016-17

Start here by hovering your mouse to view anchor text, questions and responses.

Preview Item: Allows user to view the actual anchor text(s) and question/responses with full interactive functionality.

Preview Item PDF: Allows user to download a PDF of the anchor text(s) and question/responses.
Shari is building a toy. She has to attach right rectangular prism A to right rectangular prism B. A model of the toy is shown.

**Part A**
Create an equation to find the total volume of the toy. Numbers may be used more than once.

Drag and drop the correct number into each box.

5  8  3  4  14  18

$3 \times \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} + 3 \times \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

**Part B**
What is the total volume of the toy?

Enter your answer in the box.

\[ \hspace{1cm} \text{cubic centimeters} \]

**Part C**
What is the total volume for both Tom and Jake's figures?

Show your work and explain how you found the total volume.
http://www.parcc-assessment.org

PARCC website resource includes; test design materials, ELA and Mathematics test design materials, practice tests, released test items in the Partnership Resource Center, Score results information and printables, and what’s new for upcoming years of PARCC administration.
Consider the Audience and Use Strategically
Improvement Science can be applied to multiple problems of practice.

Short, rapid cycles give educators opportunities to make adjustments.

Uses relevant, real-time data.

Encourages a bottom-up approach.

‘IMPROVEMENT SCIENCE’ IN ACTION

The Austin, Texas, public schools used a cyclical research process developed by the Carnegie Foundation for the Advancement of Teaching to test new ways to give novice teachers feedback.

1/PLAN
- Define the change.
- Make predictions about what will happen as a result.
- Design a way to test the change on an appropriate scale.

2/DO
- Carry out the change.
- Collect data and document how change was implemented.

3/STUDY
- Analyze the data.
- Compare what happened to predictions.
- Gain insights for next cycle.

4/ACT
- Decide what to do next based on what you learned:
  - Abandon the idea?
  - Make adjustments?
  - Expand the scale?

AUSTIN’S ‘HUNCHES’

DEVELOP A CHANGE

TEST UNDER MULTIPLE CONDITIONS

TEST UNDER INCREASINGLY VARIED CONDITIONS

MAKE THE CHANGE PERMANENT

One school, one administrator

Five schools, many administrators

Increasingly diverse teams of teachers and administrators

Districtwide, all administrators

SOURCE: Carnegie Foundation for the Advancement of Teaching
By December 2018, improve all 33 teachers’ belief in and knowledge of effective implementation of NGSS...
10 Standards
Focus on Student Academic Success and Well-Being

**Drivers**
1. Mission, Vision & Core Values
2. Ethics and Professional Norms
3. Equity and Cultural Responsiveness

**Core**
4. Curriculum, Instruction, and Assessment
5. Community of Care and Support for Students

**Supports**
6. Professional Capacity of School Personnel
7. Professional Community for Teachers and Staff
8. Meaningful Engagement of Families and Community
9. Operations and Management

**Anchor**
10. School Improvement
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