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Use It, Don't Abuse It:
Using Data to Inform Instruction

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Overview

- Define data literacy skills
- Demonstrate how data can support instruction
- Hands-on work with data reports
- Overview of additional resources

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A Data Literate Teacher, Defined

Data literate educators continuously, effectively, and ethically access, interpret, act on, and communicate multiple types of data from state, local, classroom, and other sources in order to improve outcomes for students in a manner appropriate to their professional roles and responsibilities.

Source: Data Quality Campaign presentation at Center on Education Policy

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Data Literacy Skills

- Identify and access potential data sources
- Analyze data sources and displays
- Create data displays
- Know the limitations of data sources
- Facilitate conversations about data

Source: Regional Education Laboratory (REL) Northeast & Island's Understanding Data Use to Improve Instruction

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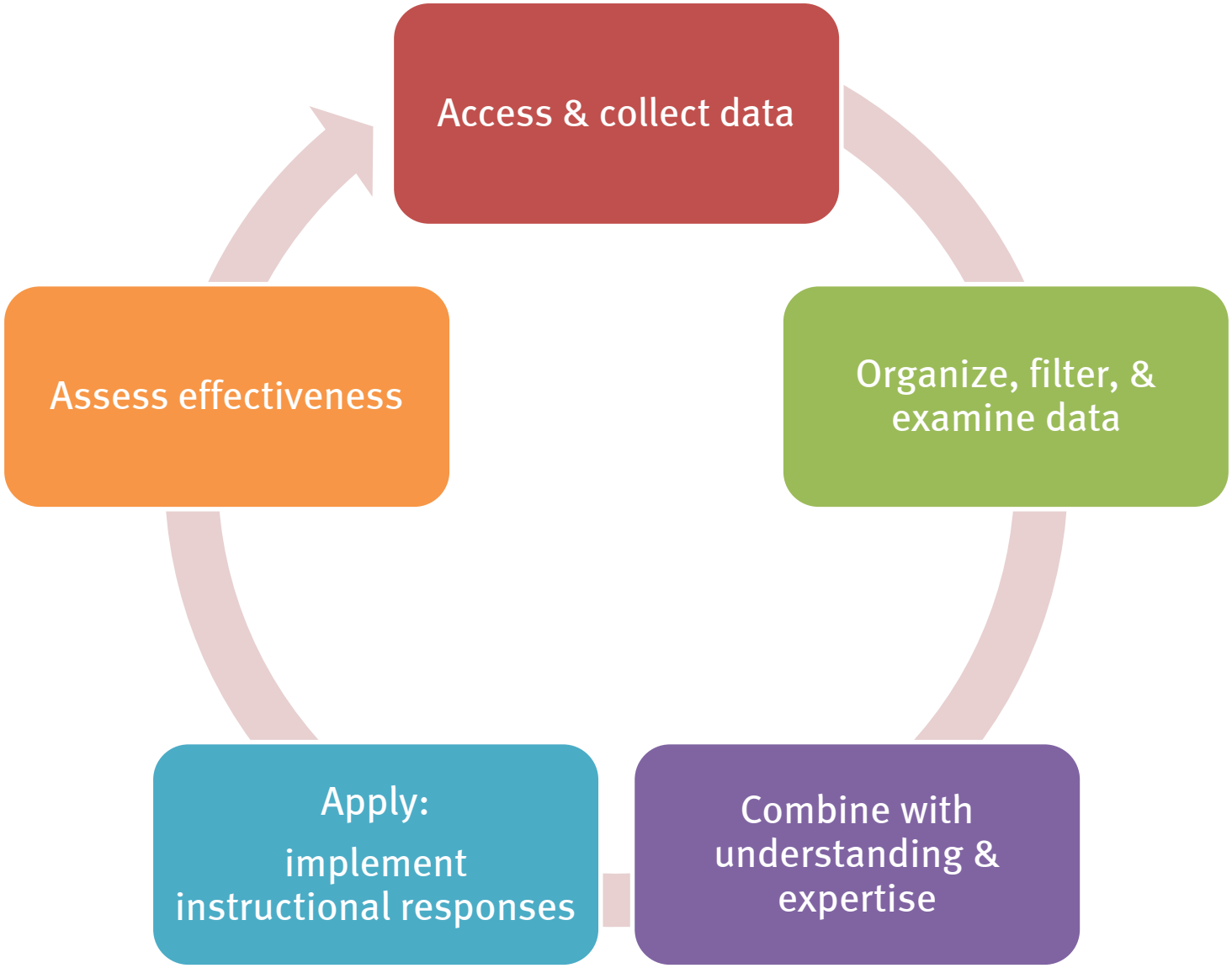

Marsh (2012). Interventions Promoting Educators' Use of Data: Research Insights and Gaps. *Teachers College Record, 114*(11), 1-48.

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Institute of Education Sciences (IES) Recommendations…

- Make data part of an ongoing cycle of instructional improvement
- Teach students to examine their own data and set learning goals
- Establish a clear vision for school-wide data use
- Provide supports that foster a data-driven culture within the school
- Develop and maintain a districtwide data system

Dig Into Data

- Look carefully at a single data source
  - Choose a single data source as a starting place
  - Seek to understand student thinking

- Dig into other data sources
  - Homework, classwork, projects
  - Ask students to explain their thinking – particularly when they have the answer wrong
  - Identify the learner-centered problem

Source: Boudett et al. (2006), Data Wise

Data Dos…

- Collect multiple sources of data (student work, formative assessments, exit slips, etc.)
- Use data to differentiate instruction
- Work in teams to examine data

Data Don’ts…

- Focus only on “bubble” kids
- Go overboard on test prep; goal is to make students feel comfortable, not stressed

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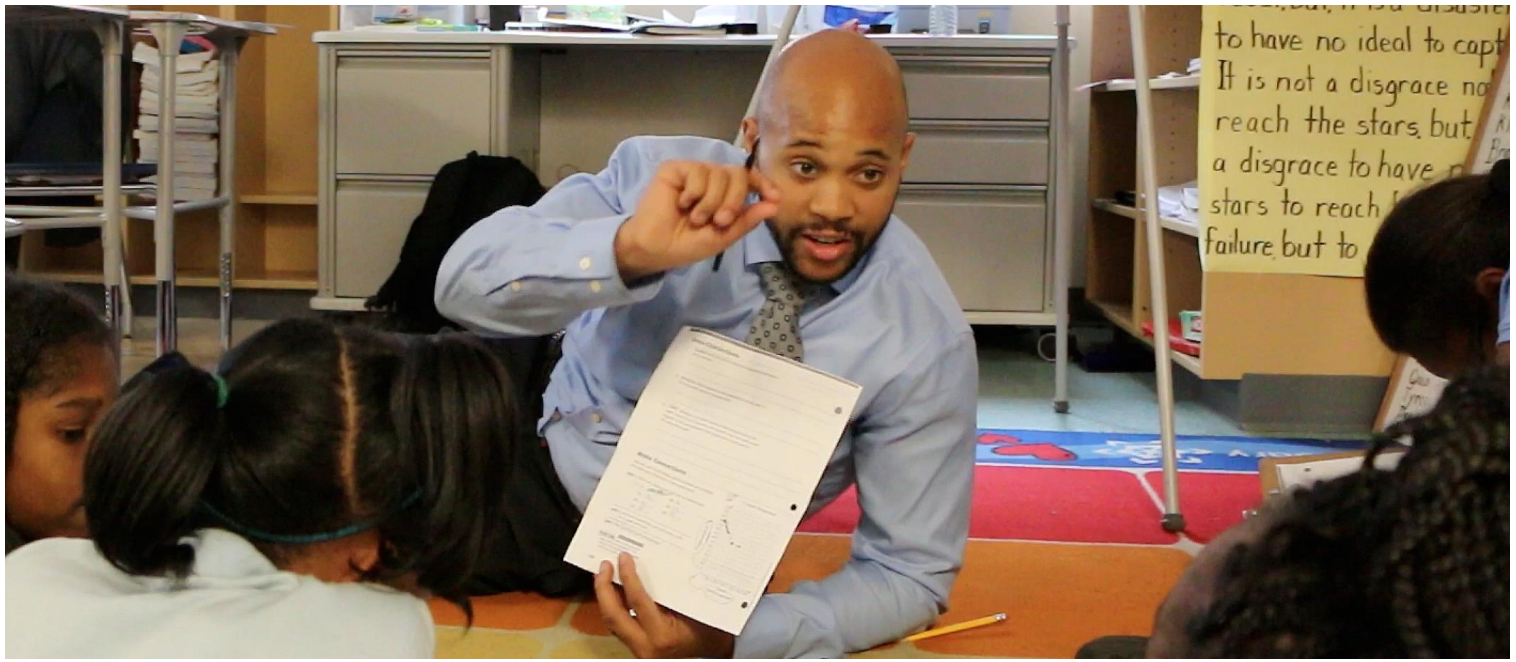
Guided by Specific Questions

Which subgroups of students are repeatedly not achieving proficiency in mathematics?

Which skills or standards do our English language learners struggle with most in mathematics?



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Interim Assessments

- Aligned to standards
- Every 6 to 8 weeks

Test-in-Hand Analysis

- Item-level analysis
- Identify why students did poorly on certain questions (trends in student errors)

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NWEA Measure of Academic Progress (MAP) Assessment

- Computer-adaptive
- Common Core aligned
- Reading and mathematics
- Data reports
- Class report
- Class breakdown by goal
- …there are many, many more reports!

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Class Report

						4 Goal Performance					
						A. Phonological Awareness B. Phonics C. Concepts of Print			D. Vocabulary and Word Structure E. Comprehension F. Writing		
7 RIT	8 Std Err	9 RIT Range	10 %ile	11 %ile Range	12 Lexile® Range	A	B	C	D	E	F
157	3.0	154-160	11	8-15	BR	Low	Low	Low	Low	Low	Low
161	3.2	158-164	17	12-22	BR	Low	Low	Low	LoAvg	LoAvg	Avg
154	2.9	151-157	8	5-11	BR	Low	Low	Low	Low	Low	Low
165	3.0	162-168	24	18-30	BR	Low	Avg	LoAvg	Low	LoAvg	Low
151	3.0	148-154	5	4-8	BR	Low	Low	Low	Low	Low	Low
151	3.2	148-154	5	4-8	BR	Low	Low	Low	Low	Low	Low
175	3.0	172-178	48	40-55	51-201L	High	HiAvg	LoAvg	HiAvg	Low	Low

Use this report to quickly identify areas that require whole-group re-teaching vs. small group instruction.

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Class Report: What do you notice?

- P.1 How are the students performing overall?
- P.2 Which goal areas might need whole group re-teaching?
- P. 3 How would you plan small group instruction using these data?
- P. 3 Student 17's parents want to know how s/he is performing in math. What can you say about the student based on these data? What other data would you draw on for this conversation?

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Class Breakdown by Goal Report

MAP: Math 6+ CO 2009 / CO Mathematics K-8, HS; 2009 (2)

(3) Goal	Goal Score (4)							
	191-200	201-210	211-220	221-230	231-240	241-250	251-260	261-270
Number Sense and Operations		B. Baker (212)	J. Carter (212) J. Davis (219) W. Jones (224) J. Rogers (228)	J. Jamison (219) K. Wright (223) M. Lopez (228) S. Bryn (229) R. Lennon (234)	H. Wang (231)	A. Sanchez (247) N. Kerr (248) C. Williams (256)	G. Kantor (253)	J. Brooks (264)
Algebraic Structures	B. Baker (212)	J. Jamison (219) S. Bryn (229)	J. Carter (212) J. Davis (219)	K. Wright (223) W. Jones (224) J. Rogers (228)	M. Lopez (228) H. Wang (231) R. Lennon (234)	A. Sanchez (247) G. Kantor (253)		N. Kerr (248) C. Williams (256) J. Brooks (264)
Data Analysis and Probability		J. Carter (212)	W. Jones (224)	B. Baker (212) J. Davis (219) J. Jamison (219) K. Wright (223) H. Wang (231)	M. Lopez (228) J. Rogers (228) S. Bryn (229) R. Lennon (234)	N. Kerr (248)	A. Sanchez (247) G. Kantor (253)	C. Williams (256) J. Brooks (264)
Geometric Relationships		J. Carter (212)	B. Baker (212) J. Davis (219) K. Wright (223)	J. Jamison (219) M. Lopez (228) J. Rogers (228)	W. Jones (224) H. Wang (231) R. Lennon (234) N. Kerr (248)	S. Bryn (229) A. Sanchez (247)	G. Kantor (253) C. Williams (256) J. Brooks (264)	

Use this report to identify instructional resources targeted to students' performance: http://rittoresource.org/

Digging Into Data: Other Data Sources

- Homework
- Class work
- Projects
- Exit slips
- Reading running records
- iReady (math diagnostic)

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Other Data Sources: What do you notice?

- What can you learn from student work that you can't from standardized assessments?
- Can you identify the reason behind students' areas of low performance?
- What steps would you take to address the problem?

Additional Resources

- Harvard EdX's free online course on Data Wise
- Books/Guides
  - Data Wise (Boudett, City, & Murnane)
  - Instructional Improvement Cycle (Toolkit available at https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=REL2015080)
  - Using Student Achievement Data to Support Instructional Decision Making (IES Practice Guide available at http://ies.ed.gov/ncee/wwc/PracticeGuide.aspx?sid=12)
- REL-NEI Data Use webinar

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