



# Data-driven Instruction and Learning: Useful Data Tools for Classrooms

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NATIONAL COUNCIL OF  
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# Data-driven Education

- “Teach, test, hope for the best.”  
(Gregory & Kuzmich, 2004)
- Instruction and learning based on data as tool to meet increasing expectations set by common core standards, teacher evaluation models, students’ readiness for the global market, etc.

- What can educators do to utilize data efficiently and make it transparent for students?

# Data Sources

- Progress monitoring assessment does not measure conceptual understanding.
- Multiple sources are necessary.
- Regular use of diagnostic, formative, and summative assessments have to become the routine.

# Decision Making

- Data serve as foundation for decisions about continuous instruction corrections and choices for relevant interventions.
- Establishing the professional culture for being receptive for data discussions.

# Purpose of Data Collection

- Getting to know the learner
- Creating adequate, positive learning environment
- Curriculum mapping with ample opportunities for data collection
- Planning lessons and instructional strategies meaningful for student learning
- **STUDENTS' GROWTH** in conceptual understanding and achievement

# Tools for Instruction and Learning

- Collection of tools utilized on different levels:
  - In the classroom
  - On school and district level
  - Online options

# Data-driven: Whose Angle?

## Teacher

- Decision-making for efficient planning and teaching
- Student-centered instruction
- Differentiation

## Student

- Learning and studying the “right” things
- Knowing my grades
- Knowing my strengths and weaknesses



# In the Classroom

## Teacher

- Small group
- Anecdotal notes
- Individual conferencing
- Data wall (general, not individualized)

## Student

- Immediate feedback
- Direct and individual communication with my teacher
- Data notebook with my standings

# Data Notebook

## Teacher

- Responsibility for achievement and reaching of goals is shared
- Explaining assessment data

## Student

- I create and keep up with my data folder.
- I set my own personal goals.
- Assessment scores are no secret.

# Scholastic Math Inventory

## 1<sup>st</sup> SMI

Date: 9/2/13

Quantile: 190

## 2<sup>nd</sup> SMI

Date: 12/10/13

Quantile: 755

## 3<sup>rd</sup> SMI

Date: \_\_\_\_\_

Quantile: \_\_\_\_\_

## 4<sup>th</sup> SMI

Date: \_\_\_\_\_

Quantile: \_\_\_\_\_

4<sup>th</sup> Grade: 580-720

5<sup>th</sup> Grade: 680-820

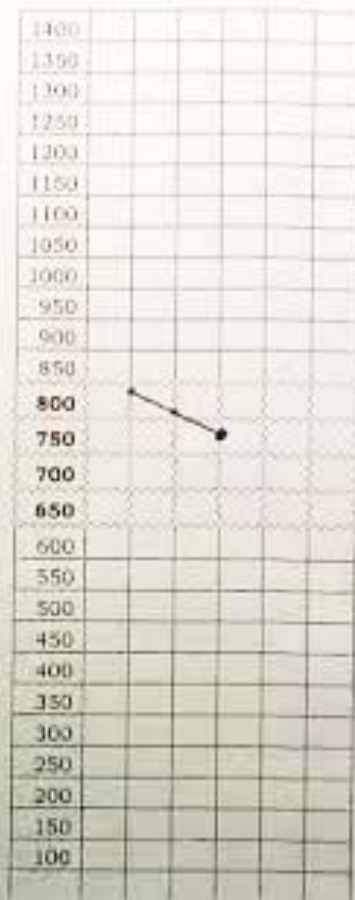
6<sup>th</sup> Grade: 780-950

What is your End of Year Goal?

1,000

What can you do at home and at school to reach your goal?

I can practice my facts every night  
at \_\_\_\_\_



# Data Wall

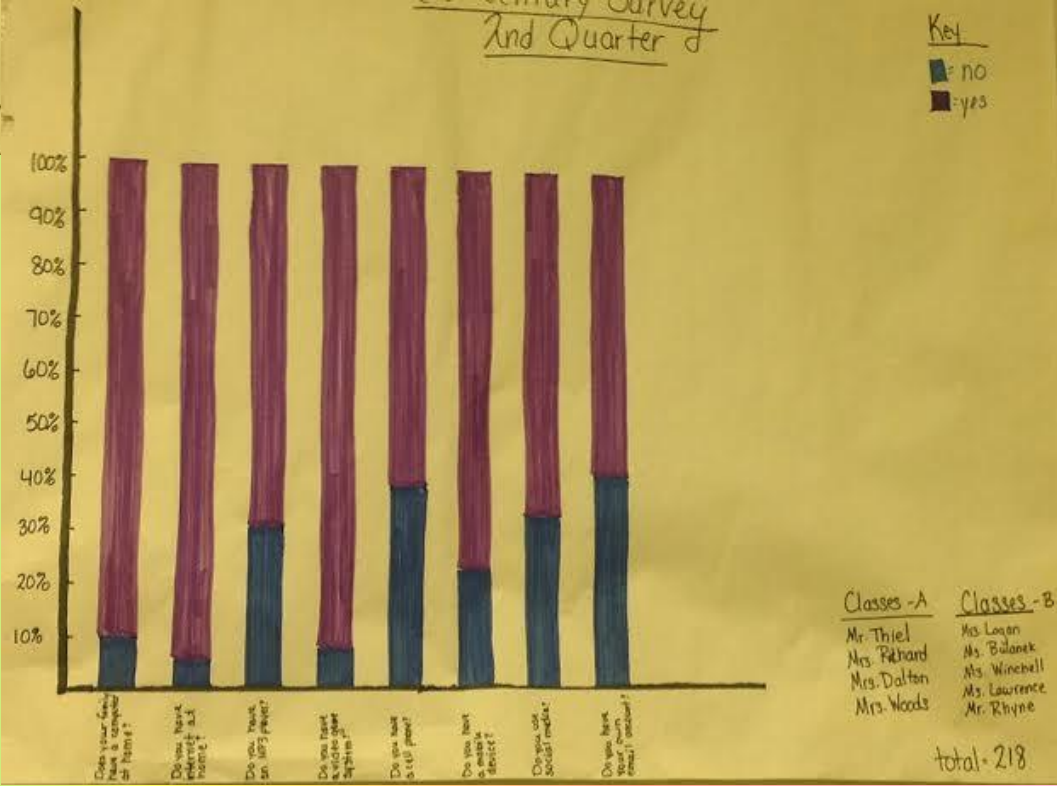
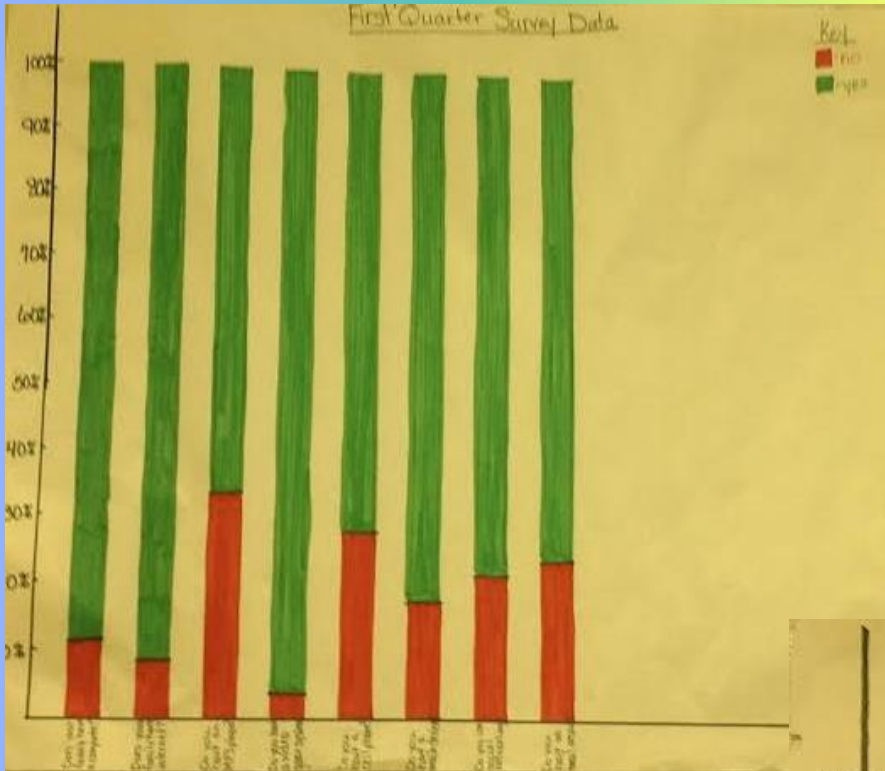
## Teacher

- Creating a sense of class accountability
- Responsibility for achievement and reaching of goals is shared

## Student

- I can see that the class works together.
- I can compare my goals and achievement with those of my classmates.

# Data Wall by Quarter



# On School/District Level: Standard-based Report Cards

## Teacher

- Evidence-based
- Easier follow-up on mastery of specific concepts
- More specific communication points between teacher, parents and student
- Separated from behaviors

## Student

- Specific feedback
- Individualized feedback
- I can ask for help more specifically
- Knowing where I need to improve in each subject area

## Fourth Grade Report Card



**Our Mission: To build the learners of today to be the leaders of tomorrow**

### Quarterly Measures of Progress

**E = Exceeds quarterly grade level expectations on concepts and skills consistently.**

**M = Meets quarterly grade level expectations on concepts and skills consistently.**

**P = Progressing towards grade level understanding of quarterly concepts and skills with assistance.**

**L = Limited progress on quarterly concepts and skills.**

na = Not assessed this quarter.

	Report Period			
	1	2	3	4
<b>Global Learner Outcomes</b>				
<b>SELF DIRECTED LEARNER</b> · Sets achievable goals · Monitors own learning				
<b>COMMUNITY CONTRIBUTOR</b> · Respects and works well with others · Understands and follows the school's expectations				
<b>CRITICAL THINKER</b> · Generates new ideas with multiple perspectives · Uses prior learning to solve problems				
<b>QUALITY PRODUCER</b> · Completes quality work · Produces work that meets or exceeds standards				
<b>EFFECTIVE COMMUNICATOR</b> · Listens and responds to the ideas and opinions of others · Effectively interacts with peers and adults.				
<b>EFFECTIVE/ETHICAL USER OF TECHNOLOGY</b> · Uses a variety of technology to create products · Follows technology code of conduct				

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	Report Period:			
	1	2	3	4
<b>Math</b>				
<b>Operations and Algebraic Thinking</b>	M			
<b>Number and Operations in Base Ten</b>	E			
<b>Number and Operations – Fractions</b>	P			
<b>Measurement and Data</b>	L			
<b>Geometry</b>	M			

	Report Period			
	1	2	3	4
<b>Science</b>				
<b>Forces and Motion – Explain how various forces affect the motion of an object.</b>				
<b>Matter: Properties and Change – Understand the Composition and Properties of matter before and after they undergo a change or interaction.</b>				
<b>Energy: Conservation and Transfer - Recognize that energy takes various forms that may be grouped based on their interaction with matter.</b>				
<b>Earth in the Universe – Explain the causes of day and night and phases of the moon.</b>				
<b>Earth History – Understand the use of Fossils and changes in the surface of the earth as evidence of the history of Earth and it's changing life forms.</b>				
<b>Ecosystems - Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in Changing habitats.</b>				
<b>Molecular Biology- Understand food And the benefits of vitamins, minerals And exercise.</b>				



	Report Period:			
English Language Arts	1	2	3	4
Reading Literature				
Reading Informational Text				
Foundational Skills				
Writing				
Speaking and Listening				
Language				

	Report Period:			
Social Studies	1	2	3	4
		<input checked="" type="checkbox"/>		

- History – 1)Analyze the chronology of key historical events in North Carolina history. 2)Understand how notable structures, symbols and place names are significant to North Carolina.
- Geography & Environmental Literacy – Understand how human, environmental and technological factors affect the growth and development of North Carolina.
- Economics & Financial Literacy – 1)Understand how a market economy impacts life in North Carolina 2)Understand the economic factors when making personal choices.
- Civics & Government – 1)Understand the development structure and function of North Carolina government. 2)Analyze the North Carolina Constitution.
- Culture – Understand the impact of various cultural groups of North Carolina.

	Report Period			
Global Learner Outcomes	1	2	3	4
<b>SELF DIRECTED LEARNER</b> · Sets achievable goals · Monitors own learning				
<b>COMMUNITY CONTRIBUTOR</b> · Respects and works well with others · Understands and follows the school’s expectations				
<b>CRITICAL THINKER</b> · Generates new ideas with multiple perspectives · Uses prior learning to solve problems				
<b>QUALITY PRODUCER</b> · Completes quality work · Produces work that meets or exceeds standards				
<b>EFFECTIVE COMMUNICATOR</b> · Listens and responds to the ideas and opinions of others · Effectively interacts with peers and adults.				
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# Student Led Conferencing

- Teacher emphasizes that student has the ownership

Good morning and thank you for coming to our conference.

I'm going to use this conference time to share my data notebook and grades with you.

First I would like to share the 5<sup>th</sup> grade goals I created for myself. (share goals)

Next, I would like to share my **Math** progress.

Here is an example of some of the best work I have done in this class. (show work)

The assignment was for us

to \_\_\_\_\_  
\_\_\_\_\_

As you can see, I earned a \_\_\_\_\_ grade on this assignment.

I am particularly proud of this work because \_\_\_\_\_

Here is an example of an assignment where I didn't meet the standard or didn't complete or turn my work in. I was supposed

to \_\_\_\_\_

but as you can see, I got a \_\_\_\_\_

because \_\_\_\_\_.

# Online Options

## Teacher

- Grades are immediately communicated
- Paperless
- Less up keeping

## Student/Parent

- Transparency through fast feedback
- Convenient online communication

# Online Options

## e. g. PowerSchool, Schoology

Google | Honors Biology - 3rd Block: 3 | X

https://www.schoology.com/course/86755137/materials

schoology | Home | Courses | Groups | Resources

### Honors Biology - 3rd Block: 3

Kannapolis A. L. Brown

Add Materials | Options

Upcoming

No upcoming assignmer

- Introduction to Science (Sustainability and Scientific Method) 1/24/14 12:00am
- Ecology 2/03/14 12:00am
- Cells 2/18/14 12:00am
- Plants 3/10/14 12:00am
- Notebook Pages 1/22/14 12:00am
- Biochemistry 4/04/14 12:00am

Materials Index

- Assignments 23 items
- Tests/Quizzes 0 items
- Files/Links 23 items
- Discussions 0 items
- Albums 0 items

each item.

Enter a member's name

### Honors Biology - 3rd Block: 3

Kannapolis A. L. Brown

	Grade	Max Pts	Comment
<b>3rd Nine Weeks S2014 (40%)</b>			
<b>Classwork</b>			
Notebook Check 3/27/14 11:59pm	10	10	
<b>Classwork grade</b>	<b>100%</b>		
<b>Extra Credit</b>			
Extra Credit - Parents Attending Open House 2/25/14 11:59pm	*	0	
Extra Credit - Signed and Returned Progress Reports 2/28/14 11:59pm	2	0	
<b>Extra Credit grade</b>	<b>N/A</b>		
<b>Gizmo</b>			
Food Chain - Gizmo 2/04/14 11:59pm	10	10	
Plants and Snails Gizmo 3/20/14 11:59pm	10	10	
Paramecium Homeostasis Gizmo 3/25/14 11:59pm	10	10	
<b>Gizmo grade</b>	<b>100%</b>		
<b>Lab</b>			
Paper Airplane Lab 1/28/14 3:25pm	*	15	
Bioaccumulation Lab 2/10/14 11:59pm	10	10	
Plant Stomata 3/11/14 11:59pm	10	10	
Flower Dissection Lab 3/12/14 11:59pm	10	10	
<b>Lab grade</b>	<b>100%</b>		
<b>Poster</b>			
Ecological Footprint Poster 1/28/14 3:25pm	10	10	
Biome Food Web 2/03/14 11:59pm	10	10	

# References

- Gersten, R., Dimino, J. A., & Haymond, K. (2011). Universal screening for students in mathematics for the primary grades: The emerging research base. *In: Gersten & Newman-Gonchar (Eds.) Understanding RTI in mathematics*. Reston, Va: NCTM.
- Gregory, G. H., & Kuzmich, L. (2004). *Data driven differentiation in the standards-based classroom*. Thousand Oaks, CA: Corwin Press.
- King, S. P., & Amon, C. (2008). Assessment data: A tool for student and teacher growth. *In: Mandinach and Honey (Eds.) Data-driven school improvement. Linking data and learning*. New York, NY: Teachers College Press.
- Mandinach, E. B., & Jackson, S. S. (2012). *Transforming teaching and learning through data-driven decision making*. Thousand Oaks, CA: Corwin Press.

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