

## Science Middle SCHOOL SUBJECT AREA CIA / DATA TEAM MEETING

### ANNOUNCEMENTS

Quarterly Assessment # 2 Scantrons due back by Feb 3<sup>d</sup>.

<http://www.newhavenscience.org/test>

Username: Password:

8<sup>th</sup> grade: Practice for CMT full court press

-Finish curriculum standards by Feb break (earth science)

-after Feb break: give practice test, GO OVER ANSWERS!!

-Review experimentation skills: post it lab, essay answers, embedded tasks 6-8

-Review 6-8 standards, GLEs

7<sup>th</sup> Grade: Continue with curriculum, reading for information

Materials: Extra order in... inventory materials and TEXTBOOKS.

See [newhavenscience.org/scimaterials.htm](http://newhavenscience.org/scimaterials.htm) for textbook recommendations, orders.

CERTIFICATION/EMPLOYMENT: non tenured teachers TALK to your principals about renewal. PLAN FOR IMPROVEMENT on classroom management. CHECK to see certification is current (034, 234 for ms science).

SUMMER PROGRAMS: Yale/NewHaven Teachers Institute, Peabody Fellows, Quinnipiac University TPQ, WISTR TPQ, etc...

### TODAY:

What is formative assessment....

How should we use it in science class?

Relationship to data team process

Group work:

Focus on formative assessment for INQUIRY standards.

## What is formative assessment?

### What Are Common Formative Assessments?

- Periodic or interim assessments collaboratively designed by grade-level or course teams of teachers
- Designed as matching pre- and post-assessments to ensure same-assessment to same-assessment comparison of student growth
- Similar in design and format to district and state assessments
- Items should represent essential (Power) standards only
- A blend of item types, including selected-response (multiple choice, true/false, matching) and constructed-response (short- or extended)
- Administered to all students in grade level or course several times during the quarter, semester, trimester, or entire school year
- Student results analyzed in Data Teams to guide instructional planning and delivery

### What Are the Guidelines for Designing Common Formative Assessments?

1. Identify and vertically align Power Standards in content areas for each grade level and course, preK–\_2.
2. Determine important topics to assess with common formative assessment; locate the Power Standards that match those topics. **SCIENCE INQs and Performance**
3. “Unwrap” the Power Standards for those topics to pinpoint concepts and skills students need to know and be able to do. **SCIENCE GLEs**
4. From those “unwrapped” Power Standards, determine Big Ideas that represent the integrated understanding students need to gain.
5. Collaboratively design common formative pre- and post-assessments—aligned to one another—that assess student understanding of the concepts, skills, and Big Ideas from the “unwrapped” Power Standards.
6. Include both selected-response and constructed-response items.
7. Review items to determine if student assessment results will provide evidence of proficiency regarding the Power Standards in focus; modify items as needed.

### What Are the Benefits of Using Common Formative Assessments?

- Regular and timely feedback regarding student attainment of most critical standards, which allows teachers to modify instruction to better meet the diverse learning needs of all students
- Multiple-measure assessments that allow students to demonstrate their understanding in a variety of formats
- Ongoing collaboration opportunities for grade-level, course, and department teachers
- Consistent expectations within a grade level, course, and department regarding standards, instruction, and assessment priorities
- Agreed-upon criteria for proficiency to be met within each individual classroom, grade level, school, and district
- Deliberate alignment of classroom, school, district, and state assessments to better prepare students for success on state assessments
- Results that have predictive value as to how students are likely to do on each succeeding assessment, in time to make instructional modifications



**Clarifying and sharing learning intentions and criteria for success (rubrics & exemplars)**



**Engineering effective classroom discussions, questions, learning tasks that elicit evidence of learning**



**Providing feedback that moves learners forward**



**Activating students as instructional resources for one another  
Activating students as the owners of their own learning**

**“Research suggests that, if done well, genuine ‘assessments for learning’ can produce among the largest achievement gains ever reported for educational interventions.”**

MARZANO STRATEGY:  
FEEDBACK!!!

How does it relate to data teams?

- FIVE STEP PROCESS
  - Step 1 - Collection and charting of data, should happen before the meeting (5 min.)
    - Proficient, not proficient, almost proficient
      - No official form for collecting data
  - Step 2 – Identifying strengths and weaknesses (10-15 min.)
    - Look at what is in our control
    - List of needs that will give the biggest bang for the buck
  - Step 3 – Goals are prioritized by areas of need (5-10 min.)
    - SMART
      - Specific
      - Measurable
      - Achievable
      - Relevance
      - Timely
  - Step 4 – and Step 5 – Selecting Instructional Strategies and Results Indicators (30-40 min.)
    - Which instructional strategies will meet the specific needs of the class instruction and for that student

## GROUP WORK

Look at Data → Look at assessments → Look at responses → Look at strategies → Future

Meet in Six Groups:

Go around and introduce, describe populations ( 5 min)

Active Participation/Listening: (no multi tasking, time out to talk to RT, everyone responds to each question)

Trained data team leader from comprehensive school facilitates

Use data from quarterly assessments/ standards/ writing samples

Anecdotal evidence is OK.... if it is representative of your population

Share ideas!

Refer to the STANDARDS!!!!

Which students have mastered which grade level outcomes/standards and proficiencies *before* explicit instruction has taken place?

Which grade level concepts and skills are most of your students lacking (non-proficient) at the beginning of the school year? At semester? Just before state and/or district assessments begin?

What are the most important instructional strategies to try to improve student achievement?

## Grades 6-8 Core Scientific Inquiry, Literacy and Numeracy

*How is scientific knowledge created and communicated?*

Content Standards	Expected Performances
<p><b>SCIENTIFIC INQUIRY</b></p> <ul style="list-style-type: none"><li>◆ Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain and predict natural phenomena.</li><li>◆ Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation.</li><li>◆ Scientific inquiry requires the sharing of findings and ideas for critical review by colleagues and other scientists.</li></ul> <p><b>SCIENTIFIC LITERACY</b></p> <ul style="list-style-type: none"><li>◆ Scientific literacy includes speaking, listening, presenting, interpreting, reading and writing about science.</li><li>◆ Scientific literacy also includes the ability to search for and assess the relevance and credibility of scientific information found in various print and electronic media.</li></ul> <p><b>SCIENTIFIC NUMERACY</b></p> <ul style="list-style-type: none"><li>◆ Scientific numeracy includes the ability to use mathematical operations and procedures to calculate, analyze and present scientific data and ideas.</li></ul>	<p><b>C INQ.1</b> Identify questions that can be answered through scientific investigation.</p> <p><b>C INQ.2</b> Read, interpret and examine the credibility of scientific claims in different sources of information.</p> <p><b>C INQ.3</b> Design and conduct appropriate types of scientific investigations to answer different questions.</p> <p><b>C INQ.4</b> Identify independent and dependent variables, and those variables that are kept constant, when designing an experiment.</p> <p><b>C INQ.5</b> Use appropriate tools and techniques to make observations and gather data.</p> <p><b>C INQ.6</b> Use mathematical operations to analyze and interpret data.</p> <p><b>C INQ.7</b> Identify and present relationships between variables in appropriate graphs.</p> <p><b>C INQ.8</b> Draw conclusions and identify sources of error.</p> <p><b>C INQ.9</b> Provide explanations to investigated problems or questions.</p> <p><b>C INQ.10</b> Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic.</p>

# Data Team Meeting Minutes

Team Leader(s) \_\_\_\_\_

Department \_\_\_\_\_

Month of \_\_\_\_\_, 200\_\_\_\_\_

Our Data Team meeting began at \_\_\_\_\_ on \_\_\_\_\_, 200\_\_\_\_. The following data is a compilation of our scores from the assessment we gave our students. Our focus for this month was

and we used \_\_\_\_\_ and \_\_\_\_\_ strategies.

Teacher Names	# Students Who Took Assessment	# Students Scoring Proficient	# Students Non-Proficient	%Students Proficient or Higher
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

We **met** our goal \_\_\_\_\_ Percentage points **above** goal \_\_\_\_\_

We **did not meet** our goal \_\_\_\_\_ Percentage points **below** goal \_\_\_\_\_

We discussed: **the ramifications if goal changes...relevancy of goal...importance of skill...other urgent goals...re-set goal higher...time frame...which students are consistently non-proficient.**

Here is our **new and/or revised goal statement.**

Percentage of \_\_\_\_\_ scoring at proficiency or higher in \_\_\_\_\_ department will increase from \_\_\_\_\_ to \_\_\_\_\_ % by the end of \_\_\_\_\_ as measured by this assessment \_\_\_\_\_ given on \_\_\_\_\_, 200\_\_\_\_\_.

We **looked at student papers** in order to identify **strengths** and **weaknesses** of our students and found the following to be an accurate reflection of their skills.

<b>Strengths of Proficient/higher Performance</b>	<b>Obstacles of Non-Proficient Performance</b>

Next we discussed possible instructional strategies that impacted student learning and have selected the following strategies to use this month.

**SELECTED STRATEGY**

\_\_\_\_\_

We expect to see these results:

\_\_\_\_\_  
\_\_\_\_\_

**SELECTED STRATEGY**

\_\_\_\_\_

We expect to see these results:

\_\_\_\_\_  
\_\_\_\_\_

Team Meeting minutes

Month of \_\_\_\_\_, 200 \_\_\_\_\_

Submitted by \_\_\_\_\_

Department \_\_\_\_\_

**Data Team Form: Step One**

**Collect and Chart Data: Before Instruction Collaboration**

Members present: \_\_\_\_\_ Meeting Date: \_\_\_\_\_

**Data – Sharing effect data that is a result of an assessment before instruction has taken place. Data team members are encouraged to complete this chart prior to the meeting to maximize team collaboration time.**

Teac hers' Nam es	# Students who took assessment	# Students Proficient and Higher	% Students Proficient and Higher	# of Non- Proficient Students	# and Names of Students likely to be Proficient at end of instructional time – <i>Already Close</i>	# and Names of Students likely to be Proficient at end of instructional time – <i>Far to go</i>	# of students not likely to be Proficient – <i>Intervention Group and in need of extensive support</i>
<b><u>Total</u></b> <b><u>s:</u></b>							

## Data Team Effectiveness Rubric

The purpose of this rubric is to assist districts with evaluating their data teams along 4 major categories - data team structures, data collection, inquiry processes, and follow up support. Each subarea is characterized along 4 developmental levels of implementation - beginner, apprentice, practitioner, and expert. Each level is intended to build upon and include the characteristics from the previous level.

	Beginner	Apprentice	Practitioner	Expert
<b>Data Team Structures</b>				
<b>Member participation</b>	<ul style="list-style-type: none"> <li>Data teams have been established but do not yet reflect all grade levels/depts.</li> <li>Members display varying levels of participation and readiness during meetings.</li> </ul>	<ul style="list-style-type: none"> <li>Data teams have representatives from all grade levels/depts.</li> <li>Members complete preliminary assignments.</li> </ul>	<ul style="list-style-type: none"> <li>Most members actively apply learning to their classrooms and use some student work to inform instructional decisions made in the teams.</li> </ul>	<ul style="list-style-type: none"> <li>All members actively apply learning to their classrooms and use extensive student work to inform instructional decisions made in the teams.</li> </ul>
<b>Frequency</b>	<ul style="list-style-type: none"> <li>Data teams have been established and just beginning to meet.</li> </ul>	<ul style="list-style-type: none"> <li>Data teams have representatives from all grade levels/depts and meet several times during the year.</li> </ul>	<ul style="list-style-type: none"> <li>Data teams meet frequently and consistently according to short cycles.</li> </ul>	<ul style="list-style-type: none"> <li>Teams also meet <i>within</i> cycles for planning, instructional support, etc. as needed.</li> </ul>
<b>Clear purpose/norms</b>	<ul style="list-style-type: none"> <li>Data teams in process of defining and clarifying team purpose as well as roles and responsibilities.</li> </ul>	<ul style="list-style-type: none"> <li>Team purpose as well as roles and responsibilities are clearly defined.</li> <li>Purposes may include facilitation of data collection, analyses, access; supporting site planning at the site; general instructional implications.</li> </ul>	<ul style="list-style-type: none"> <li>Team purposes include deeper instructional data analyses to support specific areas for professional development, identify students for interventions, evaluate impact of instructional strategies, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Team purposes include deeper instructional data analyses to support specific areas for professional development, identify students for interventions, evaluate impact of instructional strategies, as well as vertical planning across grade levels/departments.</li> </ul>
<b>Protocols</b>	<ul style="list-style-type: none"> <li>Data teams are just beginning to define protocols for looking at data but not yet consistently implemented.</li> </ul>	<ul style="list-style-type: none"> <li>Data team has articulated a common protocol that includes basic components (assessment, collection, analyses/review, implications).</li> <li>Protocol is somewhat consistently implemented across meetings.</li> </ul>	<ul style="list-style-type: none"> <li>Protocol involves deeper instructional reflection, evaluation, and design. Protocol is consistently implemented across meetings.</li> <li>Team maintains records of meetings, including areas of focus, outcomes, and next steps.</li> </ul>	<ul style="list-style-type: none"> <li>Data team has articulated a common protocol that includes basic components and deeper instructional reflection processes but allows for modification of protocol for differentiation and refinement as needed.</li> </ul>

	<b>Beginner</b>	<b>Apprentice</b>	<b>Practitioner</b>	<b>Expert</b>
<b><i>Data Collection</i></b>				
<b>Data Sources &amp; Visualizations</b>	<ul style="list-style-type: none"> <li>• Team reviews results from standardized tests.</li> <li>• Team reviews primarily school and grade level data.</li> </ul>	<ul style="list-style-type: none"> <li>• Team reviews results from standardized tests and local assessments.</li> <li>• Team reviews classroom level data.</li> </ul>	<ul style="list-style-type: none"> <li>• Team reviews results from standardized tests, local assessments, and other sources (e.g., portfolios, projects, etc.).</li> <li>• Teachers meet data collection expectations.</li> <li>• Team reviews individual student level data.</li> </ul>	<ul style="list-style-type: none"> <li>• Team reviews results from standardized tests, local assessments, other sources including implementation, access, equity data.</li> <li>• All teachers collect and calibrate student work every 4-6 weeks.</li> </ul>
<b>Uses standards</b>	<ul style="list-style-type: none"> <li>• Teachers somewhat familiar with standards and beginning to use them as basis for reflecting on student progress.</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers are familiar with standards and use them as basis for reflecting on student progress.</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers know assessment blueprints and use for curricular mapping.</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers are familiar with standards and use them as basis for reflecting on students progress, planning instruction, curricular mapping, and identifying interventions.</li> </ul>
<b><i>Inquiry Processes</i></b>				
<b>Equity lens</b>	<ul style="list-style-type: none"> <li>• Team beginning to look at achievement results by subgroups.</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers look at disaggregated data, identify achievement gaps, and identify strategies to meet the needs of subgroups.</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers examine causes of achievement patterns and consistently identify concrete action steps to address gaps.</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers consistently collect, analyze and reflect upon a range of disaggregated data elements (e.g., assessment &amp; behavioral outcomes, student voice data, access &amp; implementation data).</li> <li>• Teachers engage in courageous conversations around race, gender, culture, and consistently identify concrete action steps to address gaps.</li> </ul>

	<b>Beginner</b>	<b>Apprentice</b>	<b>Practitioner</b>	<b>Expert</b>
<b>Direct links to instruction</b>	<ul style="list-style-type: none"> <li>• Team draws general implications for instructional improvement with some reference to curricular resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Team draws specific implications for instructional improvements including direct links to standards areas, curricular resources and interventions (intensive, strategic, benchmark).</li> </ul>	<ul style="list-style-type: none"> <li>• Team engages in deep curricular reflection, such as lesson design, planning, and review.</li> </ul>	<ul style="list-style-type: none"> <li>• Team consistently examines strategies and articulates action plans that differentiate instruction for every student in the classroom.</li> </ul>
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>• Instructional decisions loosely and inconsistently linked to student needs.</li> <li>• Goals are articulated but are not consistently linked to student learning gains.</li> </ul>	<ul style="list-style-type: none"> <li>• Instructional decisions consistently and specifically linked to student needs.</li> <li>• Goals are consistently linked to student learning gains.</li> </ul>	<ul style="list-style-type: none"> <li>• Instructional decisions consistently and specifically linked to <i>prioritized</i> student needs.</li> <li>• Teachers reassess students' learning after instructional implementation.</li> <li>• Goals are consistently linked to student learning gains and are aligned to district/school strategic priorities.</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers reassess students' learning after instructional implementation and use results to further define instructional modifications.</li> <li>• Goals are consistently linked to student learning gains with clear, specific measurable targets.</li> <li>• Goals are aligned to district/school strategic priorities.</li> </ul>
<b>Celebrating successes</b>	<ul style="list-style-type: none"> <li>• Team is just beginning to identify practices and programs linked to gains in student achievement.</li> </ul>	<ul style="list-style-type: none"> <li>• Team identifies practices and programs based on a single measure and disseminates knowledge among staff.</li> </ul>	<ul style="list-style-type: none"> <li>• Team identifies successful practices and programs based on multiple measures and structures some opportunities for staff to share learning.</li> </ul>	<ul style="list-style-type: none"> <li>• Team identifies successful practices and programs based on multiple measures and structures frequent professional development opportunities for in-depth sharing, practice, and follow up support.</li> </ul>
<b><i>Ongoing Support</i></b>				
<b>Follow up</b>	<ul style="list-style-type: none"> <li>• Team identifies next steps with timelines. Instructional decisions somewhat/broadly tied to student learning needs.</li> </ul>	<ul style="list-style-type: none"> <li>• Team identifies action plans specifically tied to prioritized student learning needs.</li> </ul>	<ul style="list-style-type: none"> <li>• Team plans for immediate application of strategies and articulates clear roles and responsibilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Coaches and support providers develop follow up plans for every teacher and monitor implementation.</li> <li>• Team meets in between formal meetings as needed.</li> </ul>