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KENTUCKY DEPARTMENT OF EDUCATION

CKEC ISLN

Instructional Support Leadership Network

October 2014

ckec
central kentucky educational cooperative

Central Kentucky Educational Cooperative
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Today's materials can be accessed at: www.debbiewaggoner.com/oct-2014-isln.html

CKEC ISLN October 16th, 2015 Meeting AGENDA

-Welcome, Introduction, District Team Reflection Review
-Authentic Use of Data – *Data, Data, Data* article and Video Interview with guiding questions – ***Cherry Boyles***

Concurrent Sessions:

Social Studies Update – Teaching Kids to Ask Their Own Questions
Review/Preview Social Studies Network Meeting – ***Debbie Waggoner***

Science Update – 3D Science Lesson Plan Development
Review/Preview Science Network Meeting – ***Terry Rhodes***

PGES Update – Using Multiple Sources of Evidence to Establish Baseline data for Student Growth Goals – ***Becky Woosley & Kelly Philbeck***

-PGES Review of Resources – ***Mike Cassady***
-District Action Plan – ***Cherry Boyles***
-Meeting Evaluation

CKEC ISLN 2014-2015 Facilitation Team

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Let us know how we can assist you.

District Name: _____

Items to Consider:	*What have you done?*	*What questions do you want us to address?*
Writing Student growth goals		
Rubric development for student growth goals		
Student voice		
Framework for Teaching calibration		
Classroom observations		
Teacher Leadership		
Other:		
Assessment Literacy:		
Development of quality tasks & rubrics		
Use of descriptive feedback		
Balanced use of formative & summative classroom assessments		
Use of PLCs for instructional planning with results		
Use of PLCs for tracking results, data analysis and standards-based grading		
Use of student self-assessment and goal-setting		
KCAS standards - teacher understanding and implementation:		
Science		
Social studies		
English/Language Arts		
Math		

Data…Data…Data: From Triangulation to Student Growth

Listening to Teacher Voices

Consider	Article	Interview Video
What data sources does the teacher use initially to set her goal?		
How does the teacher triangulate data in order to focus on a priority area for student growth?		
What enduring skill does the teacher use?		
How does the teacher plan to monitor progress?		
How does the teacher use the data to determine a baseline?		
What additional data does the teacher use to monitor her goal?		
How does this additional data influence her practice?		
What coaching moments should administrators notice in these teacher stories?		

"Data, data, data"

Lindsey Stevens

Lindsey Stevens, National Board Certified Teacher, is a high school and learning school leader in the Sumner School District. She has been teaching for thirteen years, and has been working hard to implement the Common Core Standards in her classroom. She completed a comprehensive TPEP evaluation during the 2012-2013 school year.

In my building we often say, "data, data, data..". You would have to imagine saying that like Jan Brady would say, "Marcia, Marcia, Marcia."

Data is seen as a hoop in a high school gym full of type-A go getters. I am not kidding about that. Literally ninety percent of this nine-year-old staff is an all-star, or wants to be, or thinks they are. This attitude leads to us thinking we are above change. We are above needing to be professionally developed.

I fit right in here. I try with everything I have to do everything right the first time and no one ever needs to tell me to do anything twice. I have had administrators ooh and ah over my engagement strategies, my Socratic seminars and my classroom management. In the old evaluation system it was sort of assumed that the strong teachers were strong and that was that. This is how I liked it. I lived in my own little glass house at which no one would throw a stone; except one day… the data did. That data, that repulsive spreadsheet, rocked my world.

TPEP, teacher and principal evaluation project, meant that strong teachers are still strong but the assumption was gone. Now, instead of just assuming, we would be asked to show that we could impact student learning through growth goals. The biggest sentiment I heard echoed in my staff meetings was that we set the growth goal and we collected the data, therefore this wasn't scary, we could create whatever outcome we wished. Teachers were literally joking (I hope) about grading everything ridiculously hard the first time, and then just being easier on the kids the next time. They would say, write your goal in a way you can't go wrong, then no matter what happens you look like a rock star. Honestly, this sat well with me. This was the ticket to getting teachers to stop freaking out about the TPEP. Everyone was very worried that this student growth data would reflect poorly on them, or have something to do with who they riffed the next year. The answer was to make very meaningful data on purpose, put it into a fancy spreadsheet and be done with it. Perfect! This I could do.

Keeping in mind the advice of my colleagues, I set a nice solid goal that would prove itself:

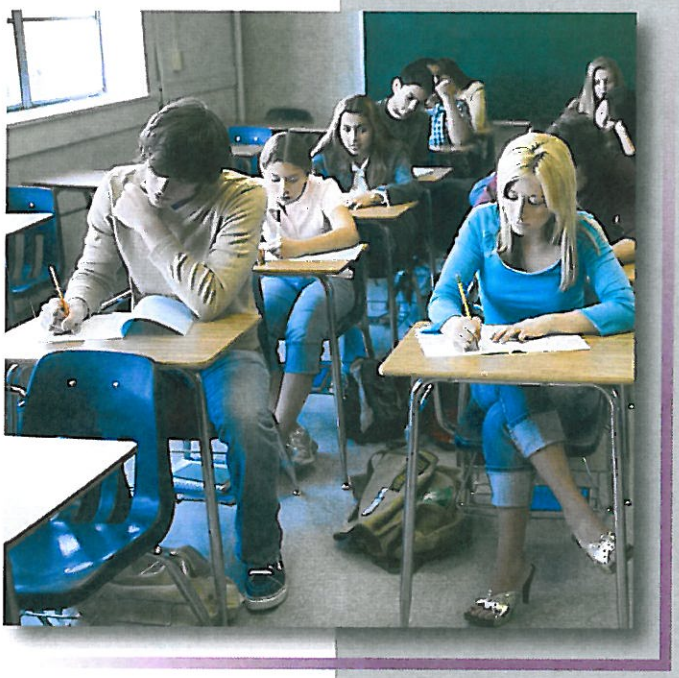
I have selected a student growth goal that supports our High Schools at Work (a district connection and initiative) Literacy goal of having students complete a Literacy Design Collaborative (LDC) task in each course or subject area throughout the year. I will establish areas of growth for my students after assessing their first LDC task. The rubric for the tasks measures seven specific literacy elements based around the Common Core State Standards. My goal will be to get 80% of my students to improve by two points on two elements of growth established in their first LDC task by the fourth LDC task.

Now all I had to do was create a spreadsheet and enter in the students' scores for each element before handing back their papers. I would just collect and make some copies of their own goals and reflections and this evaluation had almost done itself.

In my classroom I had been working with a framework called the Literacy Design Collaborative (LDC) designed around template tasks that and a rubric written to align with

the Common Core State Standards. I had already designed my course so that I used six different LDC tasks throughout the year and could assess their growth in the seven scoring elements. Notice that at this point I hadn't really thought about wanting to maximize the growth of my students. I just picked something I already did that was easily quantifiable. I was just focused on the data. How do I prove to someone else that my students had grown? I did not think at all about optimizing growth. I did not honestly ask myself how I wanted to see them improve and what I might do if they didn't.

As teachers in a TPEP pilot, we attended district meetings with a facilitator from the Puget Sound Educational Service District. At these meetings, wonderful patient people tried to get the horses to drink. We were the go-getters of the go-getters and it was still a very tough sell to get us to see that maximizing student learning was the point. We would all nod and say, "Yes, yes, track the data, data, data. We get it."



The facilitator from the ESD must have wanted to pull her hair out as she tried over and over again to impress upon us the value of meaningful data and student growth. At this time I was just really impressed with my own hoop jumping. By mid-year my students had completed three LDC tasks and everyone was moving up on the rubrics just as I had predicted. They had completed three beautiful essays that had been drafted, peer edited, finalized, and assessed. They had even been writing their own essay reflections and setting new goals for themselves between each one. Yay me and yay them!

In the next unit, I was a week short of where I needed to be for all this editing business, so I had the students write the essay on demand. Quick, down and dirty, they had already done three and I was sure they would just continue on this glorious upward trend. Mid-unit, the ESD facilitator was interested in the LDC and wanted to meet to discuss how the ESD could spread the frameworks in our region. She asked if we could discuss my data. This way she could show how the LDC would help with the Common Core and TPEP all at the same time. I was very excited to show her how great it was working out. We scheduled to meet just after this fourth unit was to be completed.

The students finished the globalization unit and turned in their essays. When I had finished scoring them I plugged their scores on each element into the spreadsheet and dun, dun, dun.... They didn't grow. Almost seventy percent of them actually did worse on organization.

What had I done?

What was I thinking?

I switched up the mode of writing and didn't think that this would impact the outcome. This happened the day before I had the meeting with the facilitator and I was supposed to show her this god-awful spreadsheet in which not only did my students not meet the growth goal, they did worse.

My first thoughts were of damage control. I stared at that spreadsheet for quite some time and thought of my options. I could close the document without saving it and then claim I hadn't

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had time to put this assessment in yet. I could blame it on the students. I am sure I could think of some really honest hurdles the kids had that week. They must have been hungry, that was it, everyone always says if kids don't eat a good breakfast they can't do well in school. As I grabbed at the thinning straws I had to just live with the reality of the data, and decided to meet with the facilitator as scheduled and admit that I hadn't taught the unit correctly. I clearly needed to include a lesson on how to organize an on-demand essay. My students needed a better drafting mechanism for this type of writing. It was a skill I hadn't actually checked for. I could see from this data that I had taught my kids how to organize a formal essay through peer edits and multiple drafts but I had failed to teach them how to do this in a different situation. I had failed, not them.

> "The moment I looked at the data and thought about how it could inform my teaching and not just as "data, data, data," I understood what it was all about."

When I walked into that meeting, I felt foolish. We sat down, and I explained. I showed her my horrid spreadsheet. I showed her how, shamefully my kids had actually moved down on the scoring element of organization when given an essay that was on-demand. I confided that I was afraid I would fail my evaluation now.

And she just said, "What are you going to do about the on demand writing skills of your students?" Well, that I had an answer for. I had already re-written the next literacy task to be on demand and planned two different lessons that included four different strategies the students could employ. That was not what I was worried about. I knew how to fix the teaching and learning problem. What I didn't know how to fix was a data problem.

The facilitator looked so happy. I thought maybe she was just amused at my pain and thought this was funny, but that was not the case. She was actually excited about the fact that the data had done exactly what it was meant to do. It had informed my teaching. The data had become the vehicle that made me a better practitioner. The data had ensured that the students who left my classroom that year were better writers and analytical thinkers across the board and they, for sure, could organize and complete an essay both through multiple drafts and on-demand that showed well employed literacy skills. I didn't have a data problem at all. What I had was an authentic use of student growth data.

After I completed the next unit, every single student scored a three or higher on the organization element of the rubric. By the time I did the sixth assessment, not only had 80% of my students moved up on the scoring elements but 100% of the students who completed all six assessments made growth of at least two points on at least two of the elements. The moment I looked at the data and thought about how it could inform my teaching and not just as "data, data, data," I understood what it was all about. I realized that this TPEP process was going to be as valuable and I chose to make it. The data was just data unless I looked at it as growth over time.

At my final evaluation I sat down with my Vice Principal. We went through all of the criteria together one by one. When we got to the student growth goal and the data, I pulled out my highlighted-analyzed-pored over-spreadsheet and a few of my kids' growth goal worksheets, and said I thought I should be at a two, basic. Though I had made the ESD facilitator very happy in providing an authentic case study, I felt as though at the end of the day I hadn't met the goal I had written in the box on the form. My evaluator just said, "Really Lindsey? A two?" I thought, "Oh great, she wants to give me a one." Instead she said, "Based on what you just explained and how I saw the kids grow, I think this is where you get a four. It is distinguished

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teacher behavior to set a goal for your kids, have your students also set their own goals and then figure out how to get them there, especially if they don't perform as expected the first time. It's good that this happened. This shows growth for both you and your students."

I had really learned something about my teaching practice for the first time in an evaluation. I had made a mistake; I hadn't been the perfect shiny example of a teacher I felt I always needed to be. I had used my data in a meaningful way that had informed my practice, caused me to grow, and helped my students be better writers. This outcome didn't happen because I made a spreadsheet or because I collected the data. The data wasn't meaningful because I was trying to prove to people I was a good teacher; the data was meaningful in spite of it. The data was meaningful because I looked at the numbers and saw myself and the kids through them. Numbers are just numbers, data is just data, and it's what we do with that data that makes it meaningful. Isn't that what we all want out of our evaluations? We want meaningful practice that improves our instruction.

I know the data mattered because I still keep the spreadsheet for all of my students even though now it's for no one but myself. I still collect data about their growth, I still have them write essay reflections and goals and not for anyone but the students and me. The data has become a tool to detect when I am making mistakes and correct them as opposed to trying to never make mistakes at all. It's always messy and quite often it comes out completely differently than I had hoped. At the end of the day the data is still just data unless I use it to get better. My spreadsheet is not perfect, I know I am not perfect, and that's good for my students.

Watch Lindsey's video... http://tpep-wa.org/student-growth-case-studies

Center for Strengthening the Teaching Profession

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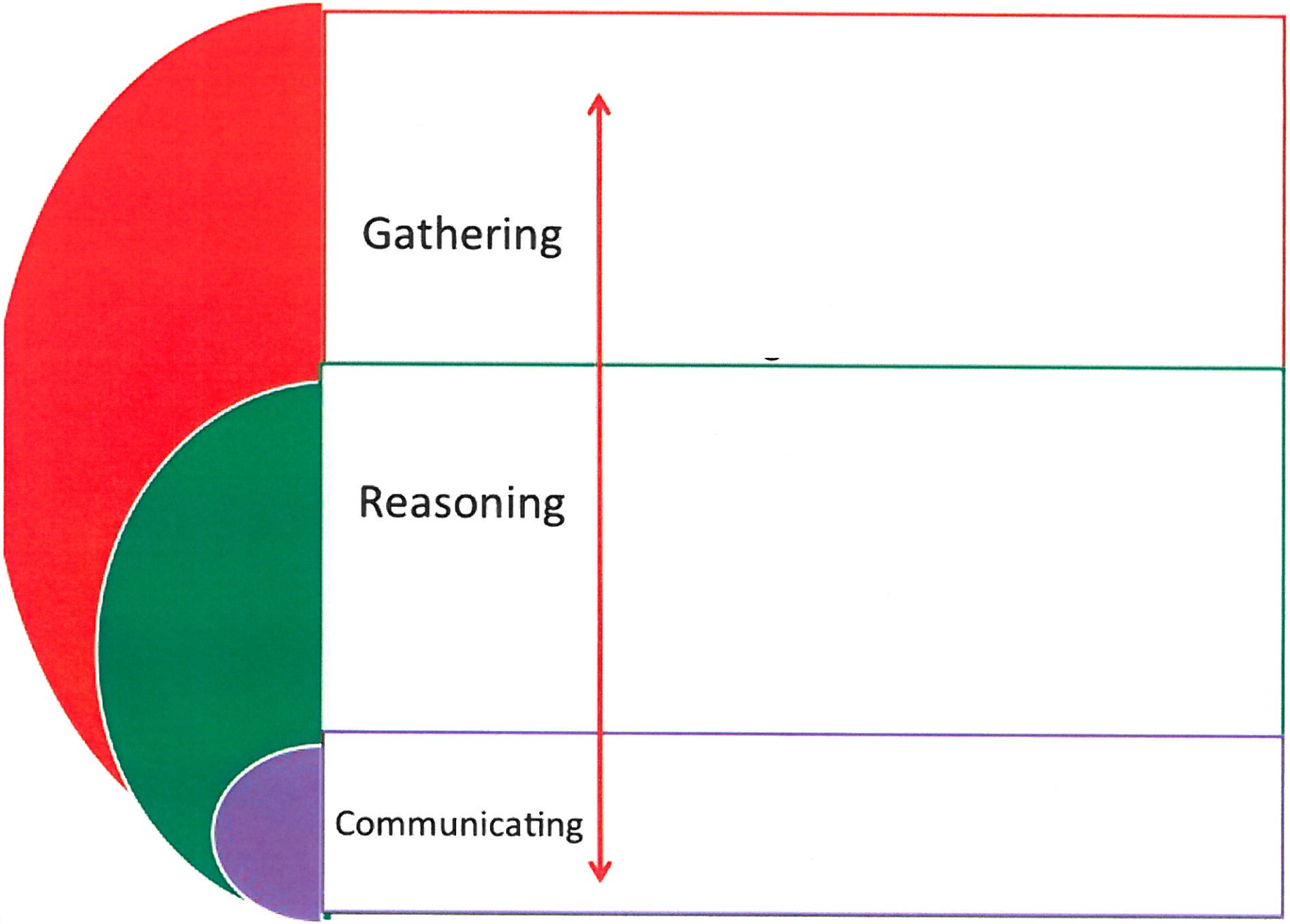
Science and Engineering Practices



(Moulding, 2012)

Science Performance	
Grade- 3	**Title:**
Topic – Force and Motion	**Predicting Motion**

NGSS Performance Expectation(s): 3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. [Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.] [*Assessment Boundary: Assessment does not include technical terms such as period and frequency.*]

Lesson Performance Expectations: (LESSON)

Carry out investigations to gather and analyze data to provide evidence of patterns of motion.
Use mathematical and computational thinking to compare the motion of objects.
Construct an explanation for how a pattern can be used to predict motion.

Student Science Performance

A. Gathering:

Students in groups of two compare the motion of 2 pendulums of different lengths (provided), and work collaboratively to quantify this comparison. Students develop and use a table to record data.
Hint: Be sure to have lengths of significant difference (i.e., 20 cm and 60 cm).
Hint: Engage students in generating ideas for quantification of measurements] How can we do better than "fast" and "slow"? Count number of swings per minute, perhaps.
Students record their data in science notebook.

B. Reasoning:

Analyze Data
Student groups analyze their data for the 2 pendulums tested to identify the relationship between pendulum length and pendulum back and forth motions (swings) per minute.
Hint: Students independently record their description of the relationship. Students share their findings with their small group and then have whole group share.

Students will predict the motion of a third pendulum of a different length based on the first 2 pendulums tested. Each group will be given a different length of string to create the 3rd pendulum.
Hint: Provide pendulum lengths that will create a "gap" in the number line created later in the lesson. For example, provide 10 cm, 30 cm, 70 cm, 80 cm, 90 cm – but not 50 cm. This will show an obvious void when the number line (visual model) is constructed.
Hint: Students self-access "How confident are you that your prediction on a scale of 1 – 5?" The purpose of the prediction is not intended to be precise, simply just to estimate relative swings per minute based on pendulum length.

C. Gathering

Students test their predictions.
Hint: Students individually record the data, compare their findings to their predictions, and discuss in groups.

Students create a way to present the whole class data for the range of pendulum lengths.
Hint: Support students in the creation of a visual representation/number line that shows number of swings per minute and encompasses the range. Have each group tape their pendulums on the line. The strings will hang down forming a visual representation.

D. Reasoning

Students analyze the data presented in the visual representation (number line), and note their observations.
Conduct a class discussion and engage students in argument from evidence.
Teacher initiated questions: *(Hint: have groups discuss first and then share with class to encourage more individual student thinking.)*
Q: Describe meaningful relationships and/or patterns in the data.
Q: How does the motion of a 20 cm pendulum compare to a 40 cm pendulum? (have students make other comparisons)
Q: How does a pendulum that swings at 80 swings per minute compare with a pendulum that swings at 50 swings per

minute? (have students make other comparisons)
Q: What would a pendulum that swings at 60 swings per minute look like? Test your prediction.
Q: What do you know that will help you determine a pendulum to fill the "gap" in the number line? Create a pendulum to fill the gap and test your pendulum.

E. Communicating

Students construct a written explanation to communicate how to determine the appropriate pendulum length for a desired pattern. Students include evidence to justify reasoning from the data.

Assessment of Student Learning

Swing on a Tree Branch

Examine the swing hanging from a tree branch as shown. Imagine yourself sitting on this swing; now give yourself a push with your feet. Describe your predicted pattern of motion for the swing. Construct an explanation for your prediction, and be sure to support your explanation using evidence from past investigations.

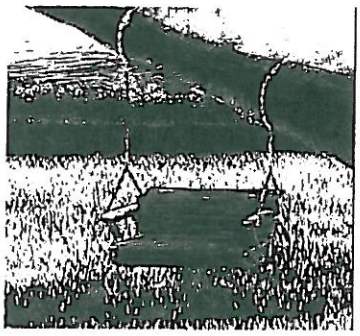


Photo source: *Yet More Everyday Science Mysteries*, Konicek-Moran, 2011, page 166.

Additional Comments

Hint: One learning experience will not provide adequate learning opportunity for student mastery of any Performance Expectation(s).

Other examples of motion with a predictable pattern could include:

- A toy car rolling down a ramp from various heights.
- A ball dropped from various heights, measuring rebound height.

	Science Essentials (*Student Performance Expectations From Appendix C, D, E*)
Science Practices Carrying Out Investigations Analyzing & Interpreting Data Using Mathematical & Computational Thinking Constructing Explanations	• Conduct an investigation collaboratively to produce data to serve as the basis for evidence. • Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon. • Analyze and interpret data to make sense of phenomena. • Represent data in tables and/or various graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. • Organize simple data sets to reveal patterns that suggest relationships. • Use evidence to construct or support an explanation.
Crosscutting Concepts Patterns	• Patterns of change can be used to make predictions. • Patterns can be used as evidence to support an explanation.
Disciplinary Core Ideas Forces and Motion	• Patterns of motion can be used to predict future motion.

3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. [Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.] [*Assessment Boundary: Assessment does not include technical terms such as period and frequency.*]

Knowledge	Reasoning or Performance Skill	Product
Explain that "patterns" describe a repeating characteristic, and give examples of patterns in the manmade or natural world.* Identify an observed and/or measured pattern, and explain the pattern. Recognize that "observations" and/or "measurements" are data that can support a claim.	Gather and analyze data to provide evidence for patterns of motion. Use mathematical reasoning to compare the motion of objects in order to identify a pattern. Explain how a pattern of motion can be used to predict other motion of an object under similar constraints.	No products.

**(Connection to Nature of Science: Science findings are based on recognizing patterns.)*

Science Performance	
Grade	**Title**
Topic –	
NGSS Performance Expectation(s): (NGSS)	
Lesson Performance Expectations: (LESSON)	

Student Science Performance

Gathering

Reasoning

Communicating

****Assessment of Student Learning***

Evidence student understand and are proficient on the science performance expectations:

Science Essentials (*Student Performance Expectations From Appendix C, D, E)*

Science Practices	
Crosscutting Concepts	
Disciplinary Core Ideas	

(B. Moulding, 2011)

How can we engage everyone in the product and process?	
Do kids have a chance to work in teams across the class, school, district, and beyond? Are we reaching out?	
Do we, as leaders, lead by ASKING questions or Answering them for students?	
Do kids have a wide enough variety of experiences that this skill is focused upon? Do kids have enough inquiry-based opportunities to test hypotheses they've made?	
Do kids set goals? And if they do, are they goals they must STRETCH for?	
Are we intentionally focusing, monitoring and assessing students' ability to reason, persuade and write with voice?	
Of all the data at our fingertips, what is critical? What is trivial? Can kids synthesize their results and prioritize their findings?	

Question Formulation Technique (QFT)
Rothstein, D. & Santana, L. (2011).

What is it?
QFT is a step-by-step process that helps students learn how to produce their own questions, improve them, and strategize on how to use them. Using the QFT requires that students ask all the questions. The teacher's role is simply to facilitate that process. QFT can be used to introduce students to a new unit, to assess students' knowledge to see what they need to understand better, and even to conclude a unit to see how students can, with new knowledge, set a fresh learning agenda for themselves. The technique can be used for all ages.

What is the purpose?
It provides a deliberate way to help students cultivate a skill that is fundamentally important for all learning. Teachers tell us that using the QFT consistently increases participation in group and peer learning processes, improves classroom management, and enhances their efforts to address inequities in education.

How do you do it?
The QFT has six key steps:

Step One: Create a prompt
The most effective prompts for this activity are statements that are focused clearly enough so that there is a direct link to the purpose of the lesson and are neutral enough so that students feel free to respond to the prompt. Many teachers use prompts that begin with stems such as "Your role/task is to…" or "You want to / A group wants to." A prompt could also be a description of a class project.

Step Two: Students generate questions
In groups, give students a fixed amount of time (5-10 minutes) to generate a list of questions, adhering to these rules:

1) Write down the questions exactly as they are said
2) Do not stop to discuss or answer the questions
3) Write down as many questions as you can
4) Statements should be rephrased as questions.

Step three: Students identify open and closed questions
Ask students to look at their lists and put an "O" by all of the open-ended questions (questions with many possible answers) and a "C" by questions that elicit one answer (a "yes/no" question or a question with a factual answer). Then, have students change one of their open questions into a closed question and one closed question into an open question.

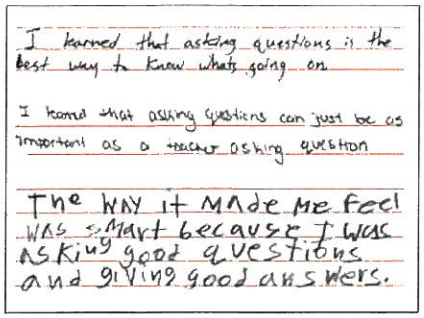
Step four: Students prioritize questions
Have groups select 3 questions from their list. It could be the three questions they find most interesting or important or the three questions that they think need to be addressed first.

Step five: Groups share questions
When groups present their questions, ask them to share why they selected these three. The questions that the class generates can be used as the focus of a class discussion, a writing assignment, a research project, or as a tool to help you plan future lessons.

Step six: Reflections
Give students the opportunity to reflect on this process by writing in a journal and/or through a brief discussion.

How do you learn more?
http://www.hepg.org/hel/article/507

Rothstein, D. & Santana, L. (2011). Make just one change-teach students to ask their own questions. Cambridge, MA: Harvard Education Press



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Teaching Students to Ask Their Own Questions

One small change can yield big results

by DAN ROTHSTEIN AND LUZ SANTANA

Students in Hayley Dupuy's sixth-grade science class at the Jane Lathrop Stanford Middle School in Palo Alto, Calif., are beginning a unit on plate tectonics. In small groups, they are producing their own questions, quickly, one after another: What are plate tectonics? How fast do plates move? Why do plates move? Do plates affect temperature? What animals can sense the plates moving? They raise questions "that we never would have thought of if we started to answer the first question we asked," says one of the students. "And just when you think you already know the question you want to focus on, you realize: 'Oh, wow, here's this other question that is so much better, and that's really what you need to think about.'"

Far from Palo Alto, in the Roxbury neighborhood of Boston, Mass., Sharif Muhammad's students at the Boston Day and Evening Academy (BDEA) have a strikingly similar experience. Many of them had transferred to BDEA for various reasons from other schools and had not always experienced much success as students. But working individually, they find that formulating their own questions engages them in a new way. One of the students observes: "When you ask the question, you feel like it's your job to get the answer, and you want to figure it out."

These two students—one in Palo Alto, the other in Roxbury—are discovering something that may seem obvious: When students know how to ask their own questions, they take greater ownership of their learning, deepen comprehension, and make new connections and discoveries on their own. However, this skill is rarely, if ever, deliberately taught to students from kindergarten through high school. Typically, questions are seen as the province of teachers, who spend years figuring out how to craft questions and fine-tune them to stimulate students' curiosity or engage them more effectively. We have found that teaching students to ask their own questions can accomplish these same goals while teaching a critical lifelong skill.

The Question Formulation Technique

Dupuy, Muhammad, and many other teachers are using a step-by-step process that we and our colleagues at the Right Question Institute have developed called the Question Formulation Technique (QFT). This technique helps students learn how to produce their own questions, improve them, and strategize on how to use them (see sidebar "Question Formulation Technique").

Question Formulation Technique

Produce Your Questions

Four essential rules for producing your own questions:

- Ask as many questions as you can.
- Do not stop to discuss, judge, or answer the questions.
- Write down every question exactly as it is stated.
- Change any statement into a question.

Improve Your Questions

- Categorize the questions as closed- or open-ended.
- Name the advantages and disadvantages of each type of question.
- Change questions from one type to another.

Prioritize the Questions

- Choose your three most important questions.
- Why did you choose these three as the most important?

Next Steps

- How are you going to use your questions?

The origins of the QFT can be traced back 20 years to a dropout prevention program for the city of Lawrence, Mass., that was funded by the Annie E. Casey Foundation. As we worked together to increase parent involvement in education, we heard parents state the same problem over and over again: "We're not going to the schools because we don't even know what to ask." Eventually, this problem led us to create a simple but powerful process that has been used effectively in a wide range of fields across the country and beyond. In health care, for example, research funded by the National Institutes of Health has shown that the QFT produces dramatic increases in levels of

patient activation and improved patient-provider communication. In the classroom, teachers have seen how the same process manages to develop students' divergent (brainstorming), convergent (categorizing and prioritizing), and metacognitive (reflective) thinking abilities in a very short period of time.

Teachers can use the QFT at different points: to introduce students to a new unit, to assess students' knowledge to see what they need to understand better, and even to conclude a unit to see how students can, with new knowledge, set a fresh learning agenda for themselves. The technique can be used for all ages.

Students have used the QFT to develop science experiments, create their own research projects, begin research on a teacher-assigned topic, prepare to write an essay, analyze a word problem, think more deeply about a challenging reading assignment, prepare an interview, or simply get themselves "unstuck."
The QFT has six key steps:

Step 1: Teachers Design a Question Focus. The Question Focus, or QFocus, is a prompt that can be presented in the form of a statement or a visual or aural aid to focus and attract student attention and quickly stimulate the formation of questions. The QFocus is different from many traditional prompts because it is not a teacher's question. It serves, instead, as the focus for student questions so students can, on their own, identify and explore a wide range of themes and ideas. For example, after studying the causes of the 1804 Haitian revolution, one teacher presented this QFocus: "Once we were slaves. Now we are free." The students began asking questions about what changed and what stayed the same after the revolution.

Step 2: Students Produce Questions. Students use a set of rules that provide a clear protocol for producing questions without assistance from the teacher. The four rules are: ask as many questions as you can; do not stop to discuss, judge, or answer any of the questions; write down every question exactly as it was stated; and change any statements into questions. Before students start generating their questions, the teacher introduces the rules and asks the students to think about and discuss possible challenges in following them. Once the students get to work, the rules provide a firm structure for an open-ended thinking process. Students are able to generate questions and think more broadly than they would have if they had not been guided by the rules.

Step 3: Students Improve Their Questions. Students then improve their questions by analyzing the differences between open- and closed-ended questions and by practicing changing one type to the other. The teacher begins this step by introducing definitions of closed- and open-ended questions. The students use the definitions to categorize the list of questions they have just produced into one of the two categories. Then, the teacher leads them through a discussion of the advantages and disadvantages of both kinds of questions. To conclude this step, the teacher asks the students to change at least one open-ended question into a closed-ended one, and vice versa, which leads students to think about how the phrasing of a question can affect the depth, quality, and value of the information they will obtain.

Step 4: Students Prioritize Their Questions. The teacher, with the lesson plan in mind, offers criteria or guidelines for the selection of priority questions. In an introduction to a unit, the instruction may be, "Choose the three questions you most want to explore further." When designing a science experiment, it may be, "Choose three testable questions." An essay related to a work of fiction may require that students select "three questions related to the key themes we've identified in this piece." During this phase, students move from thinking divergently to thinking convergently, zero in on the locus of their inquiry, and plan concrete action steps for getting information they need to complete the lesson or task.

Step 5: Students and Teachers Decide on Next Steps. At this stage, students and teachers work together to decide how to use the questions. One teacher, for example, presented all the groups' priority questions to the entire class the next day during a "Do Now" exercise and asked them to rank their top three questions. Eventually, the class and the teacher agreed on this question for their Socratic Seminar discussion: "How do poverty and injustice lead to violence in A Tale of Two Cities?"

Step 6: Students Reflect on What They Have Learned. The teacher reviews the steps and provides students with an opportunity to review what they have learned by producing, improving, and prioritizing their questions. Making the QFT completely transparent helps students see what they have done and how it contributed to their thinking and learning. They can internalize the process and then apply it in many other settings.

When teachers deploy the QFT in their classes, they notice three important changes in classroom culture and practices. Teachers tell us that using the QFT consistently increases participation in group and peer learning processes, improves classroom management, and enhances their efforts to address inequities in education. As teachers see this happen again and again, they realize that their traditional practice of welcoming questions is not the same as deliberately teaching the skill of question formulation. Or, as one teacher put it: "I would often ask my students, 'Do you have any questions,' but, of course, I didn't get much back from them." In his seven years of teaching, Muhammad also encouraged his Roxbury students to ask questions but had seen just how difficult that could be for them. After using the six-step process outlined above, he was struck by "how the students went farther, deeper, and asked questions more quickly than ever before."

One Significant Change
For teachers, using the QFT requires one small but significant shift in practice: Students will be asking all the questions. A teacher's role is simply to facilitate that process. This is a significant change for students as well. It may take a minimum of 45 minutes for students to go through all the steps the first time it is introduced in a classroom; but as they gain experience using the QFT, teachers find that the students can run through the process very quickly, in 10 to 15 minutes, even when working in groups.

QUESTION FORMULATION TECHNIQUE ™
SMALL GROUP WORKSHEET

Date: _____ Teacher/Instructor: _____

Class/Course: _____ Period/Section: _____

Participants: _____ _____

_____ _____

_____ _____

Rules for Producing Questions:

- Ask as many questions as you can
- Do not stop to discuss, judge, or answer any questions
- Write down every question exactly as it is stated
- Change any statement into a question

Question Focus:

Group Questions:

Priority Questions:
1.
2.
3.

Rationale:

TIPS FOR FACILITATING THE QUESTION FORMULATION TECHNIQUE™

When the Question Formulation Technique (QFT) is taught in the classroom:

- *the role of the teacher is to facilitate the students moving through the different steps of the QFT as simply as possible*
- *the role of the students is to ask questions and do all the thinking*

Here are some key tips for teaching the QFT process effectively.

Discussing the Rules for Producing Questions

Facilitate a full discussion on the Rules for Producing Questions the first time students are introduced to the QFT. Review the rules each time until students get accustomed to using them. Remind students to follow the rules each time you use the technique.

Give instructions for students to think about the rules and let them discuss one of the following:

- What might be difficult about following the Rules for Producing Questions?
- Which rule might be most difficult to follow?

Try to Avoid:

- skipping this part of the process.
- naming or telling the students the difficulties or value of the rules.

Tell students that the only thing you'll be doing when they are asking questions is reminding them to follow the rules.

The Question Focus (QFocus)

This is the focus for student questions related to the content you are teaching. They will be asking questions about the QFocus. It can be a statement, a visual, a math problem, music, etc.

- Present the QFocus without any additional information.
- Introduce the QFocus with minimal explanation.

For example: "Our Question Focus today is '_____.' Ask as many questions as you can. Follow the rules. Number the questions as you produce them."

Try to Avoid:

❑ Using a QFocus that is convoluted or buried in additional information, like facts, quotes, etc.	❑ Over-explaining, lecturing or giving a long introduction to the QFocus.

Facilitating QFT Steps

Give brief instructions for students to complete each one of the QFT steps.

Monitor group work and give clarifying instructions as needed. Go around the room to observe group work and interactions during the process. Listen for the types of questions they are asking. Try your best not to get pulled into their discussions.

Set a time and place in the process to discuss what to do with the questions produced. Let students know that they will be asking many questions and that there is a step in the process to talk about how the questions will be used.

Allow groups to work at their own pace. It is okay if some groups produce more questions than others.

Validate all student contributions equally. Use the same words for all contributions. For example: "Thank you" will allow you to acknowledge contributions neutrally.

To maximize the value of the Question Formulation Technique, you should:

- Not give examples of questions students should be asking. If you do, you will be setting the direction of the questions and stopping students' independent thinking.
- Resist getting pulled into the small group discussions, but rather facilitate student thinking.
- Not answer any questions while students are in the process of producing questions.
- Expect all groups to produce questions. Some may produce only a few and some more. Those who seem stuck can be encouraged to ask more simply by stating: "Look at your QFocus and think about if there's anything you would like to know about it. Turn that into a question." But, if they only come up with a few questions, that is fine. The value of producing questions is in the process of thinking and not in the number of questions produced.
- Not use different levels of validation such as great, excellent, good question, or that's the right question, when students are reporting their questions. You can just say "Thank you." If you respond to one question with "Great question," then students who don't hear that response from you will feel they failed to ask what you consider a great question and may not want to share questions in the future.

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DESIGNING THE QUESTION FOCUS (QFOCUS)

Introduction to QFocus Design

The Question Focus is the catalyst for students to generate their own questions. The QFocus should be directly related to the content you need to teach and what they need to learn. You will need a QFocus each time you use the Question Formulation Technique.

Go through the step-by-step process to design a QFocus you can use to teach your students to ask their own questions.

Subject area:_____Grade:_____

1. Lesson/Unit focusing on:	
2. Specific topic you will covering:	
3. Name your purpose of using the QFT:	__ generate interest __ stimulate new thinking __ deepen comprehension __ gather information about student understanding __introduce new topic __ other (state below)
4. Name the place in the unit or lesson where you will use the Question Formulation Technique:	__ at the beginning __ in the middle __ at the end __ at different points in the unit/lesson
5. Name how students' questions will be used (immediately or at a later point):	__conduct research __write papers/essays __develop a group project __individual projects __Socratic seminars/debates __prepare for presentations/interviews __other: (Explain below).

QUESTION FOCUS FORMAT AND CRITERIA

The QFocus can be a statement, a visual or aural aid in any medium related to the content you are teaching.

Three basic criteria for designing a QFocus:

- *It should not be a question.*

- *It should produce different lines of questioning.*
- *The simpler, the better.*

PROCESS FOR DESIGNING THE QFOCUS

- List 3-4 ideas you could use for a Question Focus.
- Try to imagine different lines of questioning.

1	
2	
3	
4	

- Assess whether or not your QFocus meets the basic criteria and your purpose for using the QFT. Check all that apply.

Criteria	Idea #			
	1	2	3	4
○ *It is <u>not</u> a question.*				
○ *It can stimulate different lines of questioning.*				
○ *It is simple.*				
○ Meets your purpose in using the QFT				

- Choose the QFocus idea that best meets your purpose in using the QFT.
- Think about the reasons why you chose this QFocus idea.
- Get feedback from peers and colleagues to improve the QFocus.

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ASSESSING FACILITATION OF THE QUESTION FORMULATION TECHNIQUE™ (QFT™)

Think about your facilitation of the QFT. Please answer "yes" or "no" for each one of these areas:

	YES	NO
1. Students discussed and named possible challenges when using the Rules for Producing Questions.		
2. I presented the QFocus in as simple a way as possible and without much additional information.		
3. I did not give examples of questions.		
4. I guided and monitored the small group work, but did not get pulled into a group's discussion.		
5. I gave directions and only answered questions to clarify THE PROCESS.		
6. I did not answer or judge or praise or criticize any of the students' questions.		
7. I allowed the groups to work at their own pace, but just checked to make sure they were following the Rules and were staying on task. I understood that groups would produce different amounts of questions.		
8. I validated all contributions equally.		

Please pay attention to any facilitation areas where you answered "no". Think about what you will do in these areas next time you facilitate the QFT.

The Right Question Institute
A Catalyst for Microdemocracy

The Question Formulation Technique™ (QFT™)

- ***Produce Your Own Questions***
- ***Improve Your Questions***
- ***Prioritize Your Questions***

USE A FOCUS or Question Focus to ask questions about.

PRODUCE YOUR QUESTIONS

Four Essential Rules for Producing Your Own Questions:

- Ask as many questions as you can
- Do not stop to discuss, judge or answer the questions
- Write down every question *exactly* as it is stated
- Change any statement into a question

IMPROVE YOUR QUESTIONS

***Categorize the questions as Closed- or Open-ended*:**

- Closed-ended questions can be answered with "yes" or "no" or with one word.

- Open-ended questions require an explanation and cannot be answered with "yes" or "no" or with one word.

Find closed-ended questions. Mark them with a "c." The other questions must be open-ended. Mark them with an "o."

Discuss the value of each type of question:

Advantages & disadvantages of closed-ended questions
Advantages & disadvantages of open-ended questions

***Change questions from one type to another*:**

Change one closed-ended question to open-ended.
Change one open-ended question to closed-ended.

PRIORITIZE YOUR QUESTIONS

***Choose your three most important questions*:**

-
-
-

Why did you choose these three as the most important?

What are the numbers of your priority questions?

DISCUSS NEXT STEPS

How are you going to use your questions?

REFLECT

What did you learn? How can you use what you learned?

Next Steps: Leadership Team Commitments

Information from today's session	Who needs to know it?	How will the district team share it?	How will the school teams share it?
From Data to Student Growth • Data Source • Triangulation • Enduring Skill • Monitoring Plan • Growth Goal • Coaching Process			
Social Studies Update • Teacher Leader Session Overview • Asking their own questions			
Science Update • Teacher Leader Session Overview • Planning 3D science lessons			
PGES Update • Gathering Evidence for SGG			
Leadership Team Planning • Plan for October			