

Tobin K-8 Science Planning, 2015-2016

<http://tobink8.org/iscience.html>

09/05/15

Dear Tobin educators,

Good morning! We ask you to access, review and integrate curriculum resources posted on the Tobin Science wePlan with your ongoing planning. Curriculum resources are designed to support planning of Science lessons, launching Science notebooks and increase Claims, Evidence, Reasoning (CER) writing during designated Science blocks K-8. Let's get started...

Planning Actions:

1. We will review the 2-page *BPS Science Core Actions* for K-12 students posted on the Science wePlan for 2015-2016 - <http://tobink8.org/iscience.html> The two Core Actions include a bullet point list of practices and a table outlining scaffolds and supports for ELLs and Students with Disabilities.
2. We invite all teachers to access and review the CCSS Instructional Practices Guide posted on the Science wePlan - <http://tobink8.org/iscience.html> The guide provides concrete examples of what the Core Actions for implementing the *Common Core State Standards (CCSS) for Literacy in Science and Technical Subjects* look like in planning and practice. The guide is designed as a developmental tool for teachers and those who support teachers and can be used to observe a lesson and provide feedback or to guide lesson planning and reflection. We invite all users to refer to the CCSS for Literacy in Science and Technical Subjects (corestandards.org/ELA-Literacy) for the grade being taught.
3. We will access the *Science Unit Rotation Schedule* posted on Calendar page <http://www.tobink8.org/calendar.html> or via the Science wePlan - <http://tobink8.org/iscience.html> We completed a K-8 Science Kit order on September 5, 2015 for the academic year. Please see Mr. Holly (K-5) or Mr. Natter (6-8) with specific questions.

4. We will access the grade specific *BPS Science Unit Outcomes*, FOSS topics and proficiency outcomes. Outcomes posted on the Science wePlan - <http://tobink8.org/iscience.html>
5. We invite you to access and watch the Foss Videos tailored for each topic to support ongoing planning via the Science wePlan - <http://tobink8.org/iscience.html>

In addition, we wish to thank Nicole from the ART team for sharing a link to a video that walks teachers through the Foss Teacher's Manual online. The video is 15 minutes long. Here is the link:

http://www.lhsfoss.org/fossweb/teachers/resources/TG_Navigation_guide/TG_Navigation_Guide.html We placed hard copies (printed on green paper) of the "*Instructions to Access Foss Teachers Guide*" in all teacher mailboxes. The Instructions Guide provides step-by-step guidelines for teachers on creating an account. Once the account is created teachers can enter access codes (p.16) for the modules specific to their grade level. They will have full access to all of the resources in the binder in electronic format. Teachers will also have access to supports such as an eversion of the student book. The book can be play aloud for students, a useful feature for our ELLs.

6. We will launch *Science Notebooks* as an artifact of student learning - to help students organize, document and makes sense of their learning. We advocate for students to use the Science notebook as a resource to revisit and apply their knowledge and insights in new learning situations. The BPS provides the following list of Essential Notebook Features:
 - The science notebook is a record of the student's experiences, ideas, and understandings about science.
 - The materials and entries are organized appropriately (as determined by teacher).
 - All entries are dated and titled/labeled.
 - There are four main assessment criteria for science notebooks: The two Quality Criteria involve classroom artifacts and student-generated entries for making sense of each lesson. (Explained further in the chart below.) The two Structural Criteria involve the notebook's organization and completeness.
7. We will access the *BPS Complex Text Selections and BPS-Developed Text Dependent Questions* all posted on the Science wePlan - <http://tobink8.org/iscience.html>

8. We will launch Common Writing Assignments, CWA across grades 4-8. All CWA's can be accessed via the Science wePlan - <http://tobink8.org/iscience.html>

Writing Connections:

1. We will increase writing across grade levels using the **Claims, Evidence, Reasoning (CER) Framework** outlined below.
2. We will use the practices associated with *Close Reading* (e.g. re-reading text multiple times, annotation, text dependent question and text based writing) to help students access and understand complex Scientific texts.
3. We will incorporate both CCSS informational/explanatory and argumentative writing into our Science lessons in order to further provide students with daily opportunities for writing.
4. We will make connections between our Writing and Science instructional blocks, using one to support the other.

Claims, Evidence, Reasoning (CER) Framework

A way to increase writing across grade levels in Science

Q1: What is it?

A way to support students communicating their explanations from experiences in the classroom and engaged in argumentation. The BPS Science department advocates the use of the (CER) framework outlined below:

BPS CER Framework:

Claim: A statement that answers a question or problem (thesis)

- Can be a yes/no statement

Evidence: Is scientific data that supports the claim.

- Can come from
 - o observations made during a lab
 - o previous lessons/research

Reasoning: Provides a justification for why or how the evidence supports the claim (conclusion sentence). Here are is a proposed sentence frame to guide students:

- Since _____ happened (summary of evidence) then _____ (claim) must be true.

Point of note... Science vocabulary is encouraged here to help students connect data for why major concepts occur

Slowly introduce each component of the CER framework separately. We encourage to use an everyday example that students could relate to...

Question to class, "How was your weekend?"

- **Claim:** I had a great weekend
- **Evidence:** (the proof): I played with my cousins, we had a party, and we ate ice cream.
- **Reasoning:** (why your evidence relates to your claim): Being around my cousins, having a party and eating just enough ice cream to not get sick is a great weekend.

Q3: How can we integrate the CER framework in a Science Lab/Inquiry model?

We encourage the design of learning activities that require students to answer one over arching question connected to a Scientific concept.

As students get more and more practice, rubrics can be established to help guide students writing. See the [BPS Science website](#) for examples of good rubrics. Resources: (clickable in the Word (doc) version)

- [Claims, Evidence, and Reasoning- Demystifying data about simple machines](#)
- [Supporting Students in Evidence Based Scientific Explanations](#)
- [Supporting Grade 5-8 Students in constructing Explanations in Science](#)

Finally, we encourage teachers to visit a BPS lesson site titled: Supporting Students in Science Thinking and Writing: Justifying Claims with Evidence and Reasoning

<http://bpssciencecer.weebly.com/examples-from-workshop.html> This website includes sample lesson plans using the claim, evidence and reasoning (CER) framework developed by teachers in the Boston Public Schools for elementary, middle and high school students.

Sincerely,

John Holly, Director of Instruction
Efrain Toledano, Principal