Case Analysis Protocol

The protocol and cases were written collaboratively by members of the Science 20/20 team.

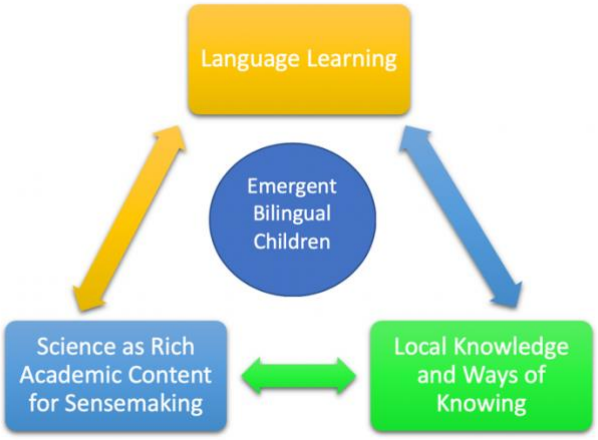
Description: Each case represents the lived experiences of those connected to the project as researchers, teachers, students, and student teachers. They are real, but names and minor details have been changed so as not to completely identify those involved. We do not intend for these cases to be black and white, right or wrong. Instead, each case illuminates areas of strength and potential and allow for self-reflection. They may ask us to articulate and question our own biases, assumptions, and taken-for-granted practices. Cases such as these are intended to surface tensions. Having group norms and protocols in place before engaging in case analysis is important for the success of the protocol. In discussing the case, we encourage you to think through the complexity of each case, seek to understand, imagine what else might be true, and exercise asset orientations.

Protocol: **Part 1.** Familiarize yourself with the Science 20/20 Framework before reading the case.

Science 20/20 Framework

Guiding Principles

1. *View **students as capable partners** in knowledge building.*
2. *Invite **productive participation** in science practices and sensemaking.*
3. *Utilize caring **formative assessment** and seek to understand what students know.*



Part 2. Read the case thoroughly. Once everyone has had enough time to read the case thoroughly, summarize the main events in the case and identify the problem(s) posed by the case.

Part 3. Use the Science 20/20 Framework and Guiding Principles to facilitate an open discussion related to the case. Same questions and prompts might include:

1. *What scientific practices and literacy practices are present in the case?*
2. *How has the teacher(s) and how might the teacher(s) invite students to draw on their funds of knowledge and local knowledge?*
3. *Where do you see evidence of students positioned as knowers, productive participation, and/or formative assessment?*
    1. *What are the opportunities to position students as knowers, invite productive participation, and incorporate formative assessment?*
4. *What else might be true?*

Part 4. Connect back to your context. Reflect. How might this case and the discussion of the case inform your work?

A Case of a Newcomer in Science

The protocol and cases were written collaboratively by members of the Science 20/20 team.

Keywords/phrases
newcomer
emergent bilingual
scientific practices
literacy practices

Fifth grade teacher Mr. Tompkins brings her 19 students to the carpet to set them up for their task for the next 45 minutes of science. Their task is to build a functioning water filtration system based on the designs and drawings from the previous class. The students receive their information sheets, go back into their groups, and grab their materials. The students spread out to various parts of the room, some on the carpet, some under tables, some on windowsills and low bookshelves, some at a small table in the back of the room.

For the first 8-10 minutes of the lesson, Mr. Tompkins circulates the room, stopping to talk to each group. Students are trying to construct a water filter system that can produce the cleanest, most drinkable, sparking water (their words). They are refining their filters, swapping out materials, talking to one another in quick, excited voices. They are running back and forth to grab more tape, an extra screen, one more handful of rocks. There is an intense energy in the room. The activity is a blend of fun and competition, with perhaps a little learning. As Mr. Tompkins visits each group, he asks probing questions. "*Why are you putting that there? Why did you choose these materials? What makes a good filter?*"

At around 10 minutes into the lesson, Fatima enters the room and looks for Mr. Tompkins. Fatima is a newcomer to the U.S. and to this school. She arrived in September just after the start of the school year with little background history shared from the principal. Mr. Tompkins spots Fatima and brings her over to one of the teacher's desks. Mr. Tompkins pulls out a stack of 30 sight words. Words like *I, like, because, go, the, a, of, in, for, family* are printed on white cards in black text. Mr. Tompkins holds the cards up one-by-one for Fatima. Fatima diligently reads the words on the cards for several minutes. After getting through the entire stack of cards, the teacher asks her to sit at her seat at her table and take out a pencil.

Mr. Tompkins then gives Fatima the stack of cards and a yellow legal pad. He points to the notepad and the words and instructs her to "use these words to write sentences". Mr. Tompkins steps away and resumes checking in on the other groups still actively constructing their water filters. While Mr. Tompkins is away, the student sits and pushes the cards around a little bit. After about 5 minutes, the student has nothing written on the paper and Mr. Tompkins comes back over and collects the materials from Fatima. He sends her to ESL pull-out instruction, which is where the student typically goes for science. Fatima "wasn't supposed to be in the room during science anyway." The lesson continues and students share their in-progress water filters proudly while Mr. Tompkins encourage them to keep thinking.

Note: We also find that many of our cases are complementary to and can be analyzed with the protocol and Equity Literacy Framework in Gorski and Pothini's text *Case Studies on Diversity and Social Justice Education* (2nd Ed., 2018). [http://www.edchange.org/cases/Case-Analysis-Model.pdf]