Remix, Remake, Curate:

Extending Access at the Intersections of Poetry and Science

Who We Are

Remix, Remake, Curate (#imakesci) provides an online community where anyone, anywhere, anytime can make science, science media, or science poetry with the North Carolina Museum of Natural Sciences, the Tar River Writing Project, and The Poetry Project.

We bring the museum to the people, transcending barriers and allowing access where geography, economics, and time once stood in the way. The North Carolina Museum of Natural Science in Raleigh provides the expertise of their scientists, The Poetry Project provides the poets, and the Tar River Writing Project guides our thinking about literacy and opens access to students and classroom teachers. Students in rural areas and nontraditional school settings are able to take advantage and collaborate at the click of a button.

Our facilitative model, based in our WordPress blog and Google+ community, allows our museum educators in the state capitol, our poets in the Western Piedmont, and our teachers in Eastern North Carolina to facilitate synchronous and asynchronous learning experiences for students and teachers across North Carolina and beyond.

Our Model

Remix, Remake, Curate (#imakesci) makes use of four facilitative teams made up of one poet, one museum educator, and one or more teacher-consultants. Each team plans a make cycle around the resources available at the museum, in which students explore a science concept, make a physical or digital product, and write a poem in response.

Our Massively Open Online Community (MOOC) takes a page from the National Writing Project's Connected Learning MOOC (#clmooc), and many of our practices find their origins there before they evolve and remix.

At the beginning of each make cycle, a blog post on TRWPConnect displays resources and a schedule of synchronous events, such as Twitter chats and Google Hangouts, for the make cycle.

Student makes and poems are posted to our Remix, Remake, Curate G+ community, along with additional resources posted by facilitators (related articles, videos, and web tools) and reminders of the synchronous events.

Each post garners facilitator feedback from our educators as well as the community as a whole. This process leverages the popularity of social media to inspire students to learn from each other just as much as the professionals leading the make cycle.

A wrap-up blog post at the end of the make cycle calls out thought-provoking work, provides links to records of synchronous events on Storify and YouTube, and looks forward to the next make cycle.

Making Our Model Work: Hacking Science Literacy

Over two years of implementing Remix, Remake, Curate, we've developed tools that have helped us to access and develop science literacy methods and protocols. Marrying the traditional content of the NC Natural Science Museum and spoken-word and literary techniques of the Tar River Writing Project and The Poetry Project has been no easy feat, but this streamlined process has made collaboration much simpler.

Some of these tools have been with us from the beginning; others were developed through reflection as tools for refining, redirecting, and revising our planning and facilitation of make cycles.

Purposeful Planning

"Having the scientists and spoken word poets working with us made us think differently about literacy, and especially science literacy, and what it is and what it looks like. We had a frame but didn't know what went in the picture. They've given us a lot, and that helped us not only fill in the picture, but re-think that frame as well."

There is no real formula on how to create, and throughout this process, we constantly built the plane while flying it. Through lots of trial and error, we were able to create a framework to keep us on track in accomplishing our goals. Thus our Planning Rubric was born, as a way of double-checking our work and ensuring that we were making clear the connections between the science and the poetry.

The science concepts, practices, and values in this rubric are evident in the introductory blog post for each make cycle. For example, Make Cycle 1 encourages students to become scientists by "observ[ing] insects around a light at night," "describ[ing] what they saw and ...us[ing] this field journal template," ensuring that participants have experience in an authentic scientific processes. In Make Cycle 2, our young scientists learned to classify by focusing on "two types of arthropods: insects and arachnids (spiders)," using a video and a Bug Body Hack Fact Chart to ensure multiple pathways to participant acquisition of these concepts.

In planning each make cycle, we looked for ways that the poetry concepts, practices, and values might reinforce or link to the science concepts we were working with. Thus, the focus on the literary concept of "sensory details" and the practice of "using the five senses" link directly to the focus on observation as a scientific practice in Make Cycle 1. In Make Cycle 2, we link the concepts of personification and classification by embodying the characteristics that define arthropods in our Bug Body Hacks - in making our own bug bodies, we are actively classifying them; the body we make then defines how we personify that arthropod in the story we tell.

This kind of purposeful planning leads to powerful learning for our students - Drequan, for example, observes a blue-grey moth under his porch light, but isn't able to identify or classify it immediately, and his observations are not detailed enough for our museum educator to identify it for him, so he engages in some internet research about moths in an effort to identify the one he saw; some of what he learns about moths

(anatomy, mating and sleeping habits, color, size, and texture) makes its way into the dialogic poem he composes with a classmate. The inquiry he engages in, first through observation, then research, and finally, composition, allows him to both learn the content and practice the methods scientists use to make knowledge and explore a new genre for expressing his scientific knowledge.

In the second Make Cycle, he uses the moth he observed as a model for his Bug Body Hack, and is now able to classify the moth and list the criteria used to classify it in the narrative he wrote personifying "Mike the Moth." The knowledge he's acquired through additional research, about the relationship moths have with their environments and larger ecosystem, opens a new line of inquiry for him - he's moved from a micro-level observation to a macro-level consideration of the moth's place in the world.

Video Invitations and How-to Guides

One of the lessons we learned through our reflections on Year 1 of Remix, Remake, Curate was that the poetry was the vehicle through which students were engaging with the science. It appealed to them - they were excited by the rhythm circles and the video walk-throughs poets were recording - they loved being taught to write poetry by *experts*. If we could replicate this sense of excitement around the expertise of the scientists we were working with, if we could use this structure to create the same sense of connection and engagement with science that students felt with poetry, *then* we would really be making science literacy.

We were already hosting Google Hangouts with scientists, but this was posing an access issue - the number of incoming connections was liited, and not every class had time to participate or was available at the scheduled time. We needed something short and asynchronous, like the video walk-throughs and handouts we were creating for the poetry, to create that level of engagement for every student.

The time lapse video observations that Chris made for Make Cycle 1 provided a mentor text for students, demonstrating what they might expect to see when they turned on their own porch lights, and her field journal template introduced students to the genre conventions of a specific type of science writing. They provide the same support structure for students' scientific inquiry and writing as Katherine's video and dialogic poem template provide for their composition and performance efforts as they write poems. In Jha'Mai's video for the bug body hack, the scientific concepts were linked directly to both the making and the writing.

Through poetry, once bugs were classified we just gave them a backstory -- where they were from, what they liked to do, and things that made them distinct and different. Students were able to personify their bugs through this process and add an illustration to match. Students also were able create a physical manifestation of their bug using found materials.

Examples:
Lantin the Spider
SpiderPig
I wish I was a butterfly song

Leveling Up

Participants came to Remix, Remake, Curate from a variety of contexts - elementary, middle, high school, and college classes; high (laptops), medium (BYO devices, like cellphones), and low (teacher-only) access to technology; and a variety of levels of access to other materials (Play-Doh, construction paper, etc.). In order to ensure access for all, flexibility was called for, and we developed the concept of Leveling Up as a core element of our planning for each make cycle.

The concept is simple: we plan a make that will work for the youngest students, with the least tech, using found materials, if possible, and provide suggestions for modification and encourage participants to modify as they see fit. Participants, left to their own devices, free to make their own choices, generally choose the most challenging option. Sometimes, that challenge looks like doing the original make and then doing it again, remixing it into a new form. Below are some great examples of what students were able to create from the Bug Body Hack in Make Cycle 2.

Violet, an elementary student, created a physical dragonfly from found materials, Violet's Dragonfly. After posting and seeing the responses, she took it a step further and created a song I wish I was a butterfly song. Students range in age and background knowledge, but this platform allowed them all to create and connect to science and bugs in a new way.

Another younger student designed their bug using our template and instructions and then added their story via Tellagami, Fly and Tellagami, each time creating something beautiful and beyond the original exercise. Nathaniel, a high school student used stop animation coupled with his words to tell his story Stop-Motion Animation, fusing poetry, science and animation. Remixing and moving above and beyond the general idea became second nature as they almost seemed to attempt to outdo each other in the Remix, Remake, Curate Community.

Response Protocol Frameworks

Early in the process, we found that one of the elements of the project that excited students the most was the prospect of an authentic audience for their work. The feedback that students received on posts in our Google+ community was a major motivator. Hearing from expert poets and scientists about their work held real meaning for them, built their confidence, and kept them excited about the work. Responding to students on that platform allowed us to appeal to their interest in social media - they received notifications for each response, just as they would on any other social platform, and rushed to see what others had to say about their work.

If we were committed to equitable access, however, we needed to ensure that each participant received focused and relevant feedback. This is work teachers do all the time, but poets and scientists might not be as comfortable with the idea of critiquing student work. Conversely, teachers tended to focus on responding to the writing, rather than focusing in on the participants' understandings of the science concepts. We needed to develop a framework that would help focus teachers on the science and provide a scaffold for poets and scientists to respond to student writing.

In the Facilitator Response Framework we framed five areas of response for facilitators to "notice" and focus in on as they read and responded to student work: the science, the poetry, the dis/connections between the science and poetry, creativity, content, and encouraging deeper thought and extension. Each area focus includes sentence starters that serve as mentor texts for effective response: "You did ____ like a scientist. I know this because you ____." Statements like this are important because they make direct connections between the text and the scientific element. Students' efforts as writers and scientists are affirmed and validated by professionals. Scientists, poets, and teachers are then able to highlight ideas and concepts students may not have even been aware of exploring, bringing them to the forefront, encouraging student reflection about the science concepts and their own writing.