On Constructivism in Action: Our Mars Storyline

This past year my Co-Teacher, Lyndsey Arnold and I embarked on a simulated journey with our students to Mars. *(All hyperlinks lead to written, visual and video documentation on our class blog!)* What is constructivist about this? Well, everything from the desire to study space, Mars in particular, to the creative form of our final individual recommendations (assessment) of how to survive on Mars, how to be a successful colony and how to successfully launch a model rocket. This seven month journey was built by Lyndsey and I using a Scottish Storyline method and guided by the instincts honed from practicing emergent curriculum construction a la Reggio Emilia. Both schools of curricular planning regard student input as one of the two sides in a learning conversation.

More than simply affixing our journey to specific math, science, social studies, and literacy standards for 3rd - 5th grade, which we did as we went, we planned for students to experience the construction of their own understanding in each individual lesson along the way. We built schema about space and Mars, investigated questions, and reported findings - using an Inquiry circle model. Students then chose an important task as part of the colony: how to build a life support system to survive the conditions on Mars. We provided research skills and leveled readings, elicited methods of persuasion after watching many commercials and helped them build a rubric for their persuasive presentation to their colony. This was just the beginning!

Once landing on Mars, a strange thing occurred: a Dictator took over both colonies and discrimination ensued! Though predicted by the students as one of the many possible problems that might transpire, students were not ready for the consequences. This part of our simulation engaged students' emotions and helped them find reason to study the civil rights movement. After about ten days of the simulated discrimination, students convened a colony assembly to make suggestions of a possible solution (including violent revolt!) and later created measurable criteria for choosing the best one: a campaign to raise awareness to help end gender and race discrimination which would include reading historical fiction in book groups and hosting a community anti-discrimination rally! According to student desire, the rally must include student created banners, a march, protest songs, a skit, a puppet show, choose your-own-adventure comics and even computer animation!

Students were now on the path to construct their own understanding of being a proactive citizen in a democracy. We provided opportunities for students to build their schema on Civil Rights and associated racial discrimination, as well as provided scaffolded lessons no matter the student's choice of which part of the rally they wanted to create. We even called in an expert musician and an expert puppeteer to help with those two groups! The assessment for this piece of the journey was an authentic and very successful community performance that was

scaffolded with student created rubrics.

But eventually, supplies ran out and we needed to return to Earth by building our own rockets. Students now had to opportunity to construct their understanding of acids, bases and chemical reactions. As we turned our curricular sights from social studies back to science, student again built a working understanding of the scientific process through the feedback loop of documenting their initial observations, making hypotheses, building testable questions and drawing conclusions. Once documented and shared back to the whole colony, we decided that to increase the chances of our success, students should form design teams to better focus on the individual pieces of this launch problem. More hypothesizing, testing, documenting, sharing and analyzing of results occurred before students built and launched their final bottle rockets.

In the end, students chose their preferred creative form (including letters, news broadcasts, advise poems, comics, or computer animations) to report their learning of each part of our Martian journey. Armed with a student created rubric, students will send their recommendations for a successful colony on to NASA! These will be entered and shared on their Evernote electronic portfolios.