WHITNALL SCHOOL DISTRICT
TEAM SCIENCE

THE LAB REPORT

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My, How Things Have Changed!

As I was cleaning out my files this week, I cam across some student worksheets and tests from the 1980's. Anyone who thinks science education hasn't changed in the last thirty years would have to come to a different conclusion after perusing these documents. Textbook generated assessments included lists of vocabulary words and diagrams that needed to be completed using a word bank. A few short answer questions at the end of the test rounded things off. Basically, the assessments determined how well a student had memorized facts. Over the years, leaders in science education working with scientists in the workplace have proposed that assessments should become more authentic, or meaningful, and mirror how scientists actually carry out their work. In this edition I'll share with you some examples of teachers who assess their students using project based learning. Don't worry. Students still learn the vocabulary and the key concepts, they just learn it in such a way that they are more likely to remember it and, therefore, better able to apply their knowledge to their next learning experience.
Laura Cerletty

A Different Approach to Learning About Landforms

Thirty years ago, teachers may have had students read about landforms, label pictures of them, and write a description of each. Today, second grade teacher, Ms. Krall, is taking a different approach to meet the standards which require her students to think and act like scientists. To learn what type of landforms exist in their neighborhood, students took a walk to Hales Corners Park to make and record observations. Back at school, they created models including maps and three dimensional structures. As students shared their final products, Ms. Krall was able to asses each students' ability to use proper vocabulary terms and describe the patterns they saw in the land. But there is more to it. While at the park, students also identified signs of erosion. Could students think of a way to keep the land from eroding during a rainstorm? The challenge was to design a solution to prevent erosion of the soil but at the same time let the water out, a problem often faced by construction engineers. Meaningful project based learning opportunities like these help students retain information and prepare them for the next level of learning.

Scientists Communicate Information with the Public

With the flu season in full swing, students may be directly exposed to an example of adaptation, an important topic in any life science class. The ability of the flu viruses to constantly change makes it difficult to develop the perfect vaccine, and this year's H3N2 adaptation is especially aggressive. How do scientists inform the public of dangerous diseases and preventive measures? Students in Ms. Alexopoulos's and Mr. Carel's classes used reliable sources to seek out information on a pathogen of their choice. Mirroring communication techniques used by local health departments and the Center for Disease Control, the students chose to make an informational poster or a public service announcement. Projects like this teach students that scientists must be able to express information both orally and through the use of informational text that the general public can understand. Their reporting must capture the audience's attention and be accurate and clear. Scientific drawings must include captions and labels that aid in understanding. Enjoy this public service announcement: LINK

Project Based Final Exam Assesses Cumulative Understanding of Biology Concepts

How we teach our classes should be reflected in the way we assess our students. As the K-12 science team develops project based lessons that incorporate content and key concepts, we also develop assessments that mirror daily work. Ms. Bradley and Mr. Smith exemplified this model during exam week. They asked their students to create a resource for a doctor's office to explain a genetic disease. The resource had to include information on how the disease impacts the structures of the body from the molecular level (DNA and proteins) to organ systems. Students were evaluated on their ability to communicate scientific information incorporating content and concepts learned throughout the semester. Check out this presentation on Huntington's Disease: LINK

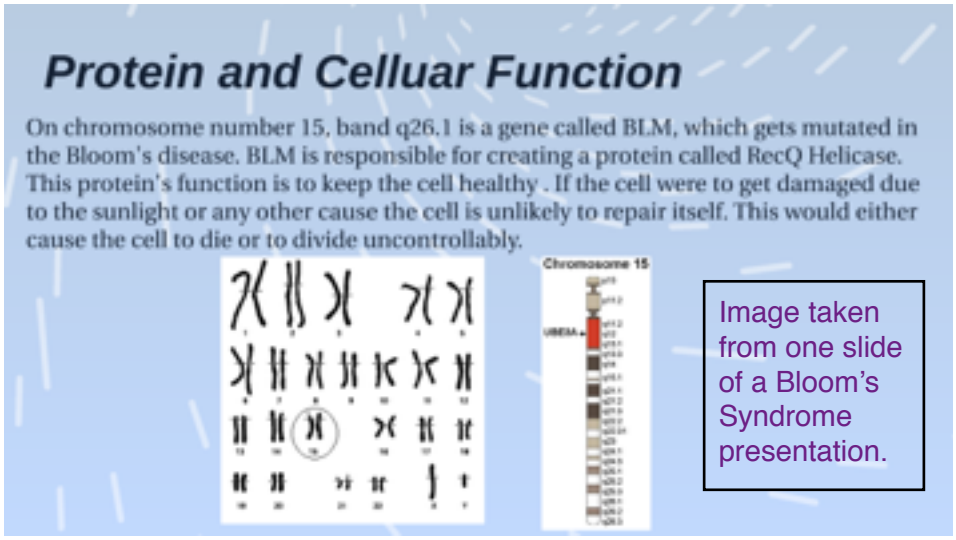

Image taken from one slide of a Bloom's Syndrome presentation.

Our students are learning to answer scientific questions and solve engineering problems through authentic learning experiences and assessments that do a better job of telling us what our students know and can do then the paper and pencil tests from thirty years ago.

Congratulations to Ms. Tasev who was awarded a Front and Center Grant from the Wisconsin Society of Science Teachers. The funds will be used to purchase supplies for the high school seminar class CSI. This is the second year in a row that a Whitnall Science Teacher has been awarded a WSST grant. Last year, Ms. Nothem received a Pella Grant to fund Science Club activities.

Questions about science education or the Whitnall School Forest can be directed to lcerletty@whitnall.com