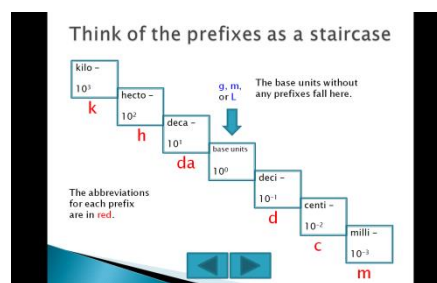


StAIR Project Report

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At CHS our Subjects in Science course fulfills the physical science requirement for our lower level students. It consists of 9 weeks dedicated to Chemistry and 9 week dedicated to Physics. In these 9 week sessions, we simply cover the basics on the Grade Level Content Expectations. All incoming freshmen are required to take this course to meet their physical science requirement. Over the last two years that I have taught this course, I have found that many of our students struggle with what should be simple concepts, one of them being working with the metric system. These are skills that are taught in middle school (grade level content expectations M.TE.04.05, M.UN.05.01-05, and M.UN.06.01), but for many students they still have trouble with metric conversions.



The StAIR project that I have created uses many teaching strategies that incorporate technology. Scaffolding is utilized as students review the prefixes and are walked through several metric conversions. The teaching of the actual conversions is done through a voicethread (here is a link to the [voicethreads page](#)). In the latter stages of the lesson, students are to again use a voicethread to actually teach a classmate how to perform a minimum of four metric conversions. To help students complete this portion of the assignment, I have a SMARTboard in my classroom that can be utilized as it is somewhat tricky to do with just a mouse. These approaches combine demonstrating, explaining, scaffolding, and learning by doing, which are all related to the constructivist approach.

Students are required to perform four practice conversions after observing how they are done. These practice problems are set up as multiple choice questions within the slideshow. Students receive feedback on whether they answered correctly or incorrectly. If an incorrect answer is selected, students are informed to double check their work, and reminded about the order of the prefixes. When a correct answer is given, the student then moves on the next question of next portion of the lesson. After students have posted their voicethreads to the website, other students will be able to comment on their lesson designs. This will allow for further sharing of ideas on how to best remember how to perform metric conversions in the future.

Now it's your turn to try.

▶ How many kilograms are in 125 grams?

- [A. 125 kg](#)
- [B. 1.25 kg](#)
- [C. 0.125 kg](#)
- [D. 12.5 kg](#)



Sorry! That's incorrect.



- ▶ If you haven't done so already, write down the staircase to help you work through this problem.
- ▶ Remember to identify if you are converting a big unit to a smaller unit or vice versa.
- ▶ Then you'll know whether to multiply or divide!

- ▶ Click [here](#) and try again!

One of the strengths of this project is that it gives the students a number of chances to practice the metric conversions. I believe that the students who struggle the most with using the metric system is because they do not use it enough. With the ample opportunities in the practice problems, creating their own problems, and the worksheet, the students will get many opportunities to master the skills. I also think a strength is the use of the voicethread to allow students to use their creativity. This enables them to construct the knowledge in a way that resonates with their learning style. The project also allows students to work at their own pace and decide if they need the tutorial or not. This is a great way to maximize time in the classroom.

After looking at some of the other examples, I think that my PowerPoint is on the plain side. I have a lot more to learn as far as animations, sound clips, and timing. An area of weakness that I am concerned about is when a classroom full of students who are all trying to record vocal responses at the same time. This will most likely not work out to well unless each student has their own microphone. I can see the amount of background noise being a problem, so implementation of this portion might be difficult. I also think that I should have incorporated more real world applications to the conversions to help make them more meaningful.