



STEM-FOCUSED CLASSROOMS

Davenport West High School

WHAT DOES THE ROOM LOOK LIKE?

Our space was designed with the concepts of collaboration and integration of technology in mind. The classroom features technology, such as six SMART projectors with computers mounted on the wall for students to use, movable furniture on casters that allow for changing groups and work partners, and a set of Chromebooks for each student to collaborate in groups with the use of Google Apps for Education.

Next to the SMART projectors, there are writable glass boards for students to brainstorm or plan out their projects. The SMART projectors are all hooked up to a matrix switch that allows us to broadcast any of the single boards to the other screens, or the boards can be used on a group by group basis. This way, we can show examples from other groups or other classes.

WHO USES THE ROOM?

This space is used for our 9th Grade Academy Classes and primarily for our newly developed class, "Integrated Geometry and Earth and Space Science (IGESS)." This class was created in order to get students ready for collaborative and 21st century skills needed in order to prepare them for the careers of the future. These are 14-15 year olds that are learning the importance of how to effectively collaborate and problem solve amongst each other.

Mr. DeGeeter (math) and Mr. Hensel (science) both teach a 9th grade academy class in this room that is not an integrated course. Mr. Hensel's science class has a similar STEM curriculum to the IGESS class, but without the geometry component.

HOW DO YOU USE THE ROOM?

This room is partially used as an extension of our City High Program, which is a program for students in Project Lead The Way and Engineering and Design, to further solidify the STEM concepts of collaboration and importance of 21st century skills. The students that are enrolled in the City High Program are the same students that are in our IGESS class.

We have been piloting the effectiveness of this learning environment for use of changing our 9th grade academy classes into more of STEM pedagogy and Project-Based Learning. We are finding that when used for these practices, the students' value and retention of knowledge are positively impacted because the content is making it more meaningful and useful to them.

WHAT ARE SOME TIPS FOR OTHERS INTERESTED IN DEVELOPING A STEM CLASSROOM?

Hensel: Do it. It can be difficult, new, scary, nervous, but most of all it can be eye opening. It took some work to get the combined curriculum ready, and we were a little nervous about how smoothly it would go. When we started to get into the swing of things and developed a pattern, it helped them learn how to collaborate with each other.

DeGeeter: The transition to a space with so much possibility and so many options can be intimidating and sometimes overwhelming. Fortunately, this year has been a great experience, highlighting just how well providing students with options and freedom can benefit the flow and work level on any given day. Being in a space such as this makes students want to go above and beyond.

ANY OTHER PIECES OF ADVICE?

As we all have probably experienced at one point or another, technology can be very effective, but only if it is not one of those few-and-far-in-between days that it does not work properly. Have a backup prepared. We have had a few technical difficulties in our rooms, but we had backup plans ready to go. Prepare, plan, and prepare some more. It is a fair amount of work to get everything ready to go and planned out, and it can be some up-front work, but it will save you headaches in the long run.

CONTACT INFORMATION

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For more information, visit www.IowaSTEM.gov/STEMClassrooms