

## CASE STUDY

# Building a School—and a Computer Science Program—From Scratch

## Introduction

Last year, Mountain House High School didn't offer a programming class. In fact, Mountain House High School didn't offer any classes—the school didn't exist. A team of experienced school leaders and educators are building the comprehensive 4-year high school from the ground up, with a bold mission to create a 21st century learning environment that will prepare students to be both college and career-ready. 2014–15 has been their first school year in action.

Creating a school takes vision, organization, and innovation. Brian Gervase, head of the math department at Mountain House, has taken on the task with verve. He moved out from Chicago IL, where he taught Calculus for 20 years, and is committed to infusing the department with innovative new teaching and learning strategies that engage and excite young learners.

“**Coding should be an essential math skill now!**

- Brian Gervase

To Mr. Gervase, teaching computer science was a key part of that plan. In his own words, “coding should be an essential math skill now.” Here at CodeHS, we couldn't agree more.

Though he had never taught a computer science class before, he recognizes what an important skill computer science and programming is for 21st century learners. He made it a priority to incorporate programming into the school's curriculum from the start. With 79,780 jobs in computing open in California, students who were excited to start learning, and a location that's just a hop, skip, and a jump from the nation's tech center, Silicon Valley, his administration also supported this goal.

The question was—how to teach it? The young math department did not have any dedicated computer science teachers nor the time or resources to build a computer science curriculum from scratch themselves. They did, however, already plan to employ blended learning tools to help teach math classes. Mr. Gervase realized they could do the same with coding.

When Mr. Gervase found CodeHS, it was the perfect solution. Here was a ready made curriculum that could provide students with the right level of introductory material to be both engaging and rigorous enough to help students develop problem solving and computational thinking skills that Mr. Gervase believes are also essential to math.





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Further, CodeHS is designed to support teachers who are new to computer science. With the tools, resources and support that CodeHS provides, Mr. Gervase picked up programming skills himself while teaching his students to code. He says it has been a really neat experience!

In Mr. Gervase's eyes, teaching students to code has a broader impact on how kids think about approaching other problems. So far, his class has been a success. The self-paced, blended learning style allows students to receive their instruction at a level and pace that works for them. And with everything that the students learn and complete well-documented on the site, it's easy for Mr. Gervase to see how students spend their time in class and identify which students need one-on-one help.

Simultaneously, students who click with coding can stay engaged and challenged, moving speedily through the curriculum and working on creative projects of their own. One of Mr. Gervase's stellar students coded the 2048 game [LINK] from scratch in the sandbox—not an easy feat! It's inspiring to see students become so passionate about an academic subject linked to clear college and career opportunities.

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It's not always easy, though. Mr. Gervase says that learning to code can be hard for students. The blended learning model puts pressure on students to be good learners and many students are "hesitant to dive in to tackle problems." Coding isn't always as glamorous as clicking a button and seeing your program spring to life on the screen. It can be frustrating. Ultimately, though, it's important that students learn to struggle to think mathematically through a problem and navigate through an intellectual challenge, rather than give up.

So where is this program headed? Mr. Gervase is excited to expand computer science offerings at Mountain House High School. Next year, in addition to offering the introductory coding course, Mountain House HS will be offering an AP level computer science course. Here at CodeHS, we're excited to help make that happen and we look forward to working with him and fellow teachers to build out the computer science program at the school.

We asked Mr. Gervase what advice he would give to schools and teachers thinking about teaching coding with CodeHS. He said, "the course is ready, it's show time!" As a teacher with minimal previous experience himself, he says that as long as you're interested in doing some learning yourself, CodeHS is ready for you.