

Inspiring Confident Learners Through STEM Competitions

At the school where Beth Brubaker teaches, participating in STEM competitions like *FIRST*® LEGO® League Jr., *FIRST*® LEGO League and *FIRST*® Tech Challenge isn't just an afterschool option—it's part of the curriculum. North Idaho Stem Charter Academy is a **project-based STEM** school, where core classes are taught in the morning, and the focus of the afternoon is on projects. So from first grade through high school, every student is participating in STEM projects and competitions.

This structure comes from a philosophy that it's important to get **kids excited about STEM at an early age**. According to Brubaker, many students don't get approached about STEM until they're in high school, and then they're expected to want to go into STEM careers. "But by then it's too late," she says. "They're already afraid of math; they're afraid of science." When you start introducing STEM-based learning in kindergarten, on the other hand, and then you supplement their core learning with *FIRST*® LEGO® League Jr., then *FIRST*® LEGO® League and onwards, it's a natural progression. "It's part of their mindset," says Brubaker. One student's college acceptance letter even specified his involvement in robotics as a key factor in his acceptance.

Following this progression, she says, she sees students looking towards **careers not just in robotics and programming, but also in other STEM fields** like aerospace, neuroscience and genetics.

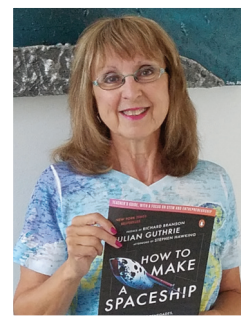
Students aren't just **building towards STEM careers—they're developing**

important 21st century skills that they can use today and for the rest of their lives. Brubaker highlights collaboration and communication as the most important skills that students build through their projects. To be successful in competitions, they have to communicate both as a team in the classroom and externally with the world.

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She tells the story of one 5th grade student who, when he began the school year, was so shy that he barely spoke. He wouldn't make eye contact, and he wouldn't talk to her, to the point where "it interfered with being able to do anything with him." But by the end of the *FIRST*® LEGO® League season, his team was one of six in the world selected to go to Copenhagen, and "he was actually down on the auditorium floor with the microphone in hand, leading the whole audience in cheers and songs."

FIRST® LEGO® League provided him with the opportunity to shine—and that's what LEGO® Education does for so many students. Brubaker says this is **because it strikes a perfect balance: between the**



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classroom and the outside world, between hands-on learning and more research-based skills. So students at all learning levels can learn, innovate and thrive. They succeed because they're having what Brubaker calls "hard fun." And this is something she believes all teachers can succeed at as well, no matter their previous experience with robotics and programming. "Yes, it's a learning curve," she says, "but I think that once they get their feet wet, once they go to a competition and actually see what it's all about—they'll find it irresistible."

