



FAST FACTS

Name: Cynthia Pulkowski

Role: Executive Director,
ASSET STEM Education

Districts: Nationwide

Challenge: Providing professional development and instructional materials aligned to state and national standards that further the goals and purposes of STEM education across the U.S., especially for early childhood education.

Solution: Carolina Curriculum Building Blocks of Science®.

Results: Teachers and students fully engaged in science, meeting standards, and laying a solid early foundation for success in more advanced science studies.

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Recipe for Success in Teaching STEM Literacy

A dedicated leader in national STEM education efforts turns to a trusted resource to help move students from literacy to fluency.



Strategic leadership. Dr. Cynthia Pulkowski supports hands-on, inquiry-based science programs.

Cynthia Pulkowski is Executive Director of ASSET STEM Education, a national nonprofit leader in science, technology, engineering, and math (STEM) education. ASSET (an acronym for Achieving Student Success Through Excellence in Teaching) provides professional development, instructional materials, and consulting services that align with national and state educational standards. “These services are results-oriented, research grounded, and inquiry-based,” Pulkowski explains. “ASSET is partnering with 20 early childhood centers in the Pittsburgh region to design and deliver professional development using a new unit of Building Blocks of Science® from Carolina Biological, called *Push, Pull, Go.*”

How It Works

The idea is to help students to discover patterns of how objects move by working through a series of lessons about motion. “In the tradition of Rube Goldberg, young scientists build action toys that move,” says Pulkowski. “For example, they might use things such as a foam ball, a line of tumbling dominos, a Kid K’NEX® swing, a slide, or a spinning top. Student pairs are challenged to build a contraption that ‘works’ — they push it, pull, and watch it go. Each device moves in a different but predictable pattern and students build grade-level-appropriate systems and an understanding of moving objects.”

Building Blocks of Science (BBS) units were developed by Carolina Curriculum to help teachers and students establish a solid foundation in elementary science. “These innovative kits foster cooperative learning and critical thinking,” Pulkowski notes. “Students work in teams, actively discuss and compare their findings, record data, and assess their understanding — all at appropriate grade levels.

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—Cynthia Pulkowski, Executive Director, ASSET STEM Education



An early start. *Building Blocks of Science provides young students exposure to science concepts, setting them up for success later on.*

“We trained teachers in the use of BBS and then observed in their classrooms to see how the module was being implemented,” she says. “Through these observations, we have seen children as young as three years old using vocabulary that includes ‘push,’ ‘pull,’ ‘force,’ ‘motion,’ ‘ramp,’ ‘swing,’ etc. Children at this young age may not necessarily be *mastering* concepts, but they are being *exposed* to the process skills that they will eventually use for the rest of their lives. Early and consistent exposure to such [science] concepts is key to building a solid foundation for future learning,” says Pulkowski.

Why Push, Pull, Go

“ASSET’s customers — organizations that teach early childhood classes — were requesting materials that were more user-friendly, while still providing content that can be understood for specific age groups,” she observes. “Through our relationship with Carolina Biological, we are meeting these needs,” Pulkowski says.

“From our perspective, teachers and students derive a number of values and benefits from BBS,” she notes. “The manual layout is very teacher friendly.

It is easy to follow and locate what is needed to teach each lesson. Within each lesson, there is an overview, objectives, standards, vocabulary, a list of materials, estimated

and suggested times for teacher preparation and for actual lessons. The background information on the science concepts being taught helps to build understanding and confidence for the teacher using the module. Walking participants through each part of every lesson is an added benefit for the teacher.”

INQUIRY-BASED SCIENCE

Building Blocks of Science K-5 units are written explicitly to meet Next Generation Science, Common Core Literacy and Math Standards using an integrated, cross-curricular approach.

Recipe for Success

“BBS manuals contain teacher tips in each lesson, as well as suggested teacher-guided questions,” Pulkowski continues. “We strongly encourage the use of the science notebook because it does a good job of supporting the teaching. BBS also includes materials that help connect parents to what is going on in the classroom. The overall kit is extremely well thought out. Additionally, BBS has done a great job aligning to standards, making sure lessons are kid friendly and teacher friendly. It makes teaching and learning STEM topics so much more effective,” says Pulkowski.

“I strongly encourage education leaders to consider BBS,” she concludes. “It equips teachers with the right materials, offers excellent professional development opportunities, and is a terrific recipe for success in teaching and learning STEM literacy.”