

**FAST FACTS**

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**Challenge:** Designing grades K–5 science curricula specifically for remote-learning situations that will meet varying student and teacher needs both now and in the future.

**Solution:** Create remote-learning science curricula, lessons, materials, and lab kits based on the Building Blocks of Science<sup>®</sup> 3D program.

**Results:** Teachers have access to standards-aligned lessons that are designed for remote teaching, students enjoy hands-on science learning that engages them and builds their three-dimensional learning skills, and schools can provide uninterrupted science instruction via remote learning.

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***Building Blocks of Science<sup>®</sup> 3D: Forging the Path for Successful At-Home Learning***



BBS3D@Home remote teaching and learning science resources enable elementary teachers to provide continuity to their students studying remotely.

The pandemic of 2020 challenged schools and educators around the world. The range of alternatives employed during this recent educational challenge may never be fully known, but that of the State of Washington Educational Service District (ESD) 113 is inspiring and provides some great lessons learned for future remote education situations.

Washington uses ESDs to organize and coordinate public K–12 education. In the west-central part of the state, ESD 113 serves 30 school districts across five counties: Grays Harbor, Lewis, Mason, Pacific, and Thurston.

Scott Killough is the regional administrator for ESD 113. His strategy to ensure educational continuity during the pandemic actually began several years prior. One of his first challenges when he came to the ESD was to evaluate and select a new K–5 science curriculum. Killough selected the Building Blocks of Science<sup>®</sup> 3D (BBS 3D) program for several reasons, including its fully integrated components,

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“We have a phrase—from confidence comes competence, and they [teachers] feel more competent to teach the science after the [BBS 3D] training.”

—Scott Killough



alignment with Next Generation Science Standards\* (NGSS) and Washington State Science and Learning Standards, availability of both digital and paper resources, and Carolina Biological Supply Company’s commitment to teaming with the educators it serves.

ESD 113 began a phased implementation of the BBS 3D program in the fall of 2015. Killough also instituted annual summer training to familiarize teachers with the BBS 3D curriculum and lab kits. He saw the teachers’ confidence soar, thanks to the hands-on training. “We have a phrase—from confidence comes competence,” Killough explains, “and they feel more competent to teach the science after the training.” He was also pleased to see the teachers realizing that science is engaging for their young students. “Kids love to do science, they truly do,” he says. “I always describe it as organized playtime.”

Fast forward to the pandemic-prompted remote learning of 2020–21. The educators of ESD 113 realized anew the advantages of the BBS 3D program of hands-on science learning at the regional, district, and teacher levels.

## The Region Ramps Up

When the pandemic gained momentum in the spring of 2020, the staff of ESD 113 had to quickly transition from classrooms to remote learning. Little did they know at that time that remote learning would continue through most of the 2020–21 school year.

Killough was committed to ensuring educational continuity for the region’s students. To do so, he needed to ensure teachers had the guidance and materials they needed to continue teaching effectively during the remote learning period.

Killough and Carolina worked in parallel to prepare teacher and student resources for 2020 and beyond. “Carolina

started putting together take-home science lessons using the BBS 3D curriculum,” Killough explains. Carolina created the eight-week BBS3D@Home science solution, which Killough then used to build courses in the Canvas learning management system that teachers could access and utilize.

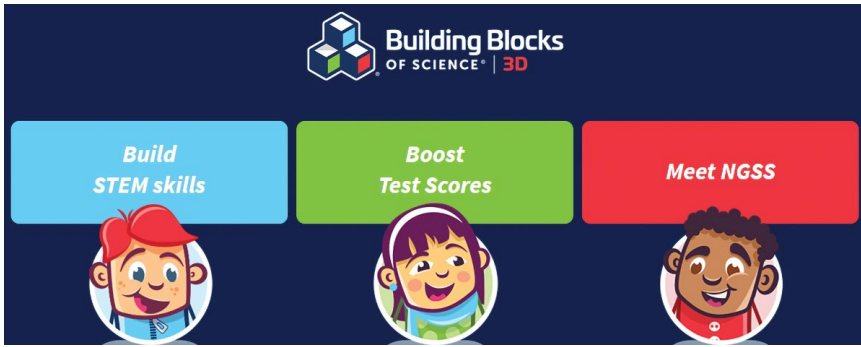
Killough and his ESD team also created take-home science packets with printed materials that were distributed to all their school districts. “Our warehouse manager and his crew put together 8,000 packets for the fall rotation and delivered them to the schools,” he says.

As the 2020–21 school year unfolded, Killough conducted “superintendent road shows” remotely. “This year, I walked principals and superintendents through the Canvas courses and showed them the materials list for the take-home science kits,” he explains. “They realized how much effort and thought had been put into it and that the science lessons and labs could be multidisciplinary as well.” For example, students collect, record, and analyze their experimental data, which helps them improve their math skills. They also read lesson background information and lab instructions, record notes during the labs, and write lab reports—all helping to improve their ELA skills. In addition, the BBS 3D program includes materials for both at- and below-level science literacy readers so all students excel.

ESD 113 continued with winter and spring rotations of packet distribution. “I just wanted everything to be at the school and online for the teacher,” Killough says. “They had access to the Canvas courses, they had access to . . . BBS3D@Home, and the take-home kits were in the students’ hands.”

Of course, the individual school districts, schools, and teachers also had important roles to play in this fast-paced and innovative strategy.

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Standards-aligned, engaging science helps students advance even when studying remotely.

## School Districts Deploy

The city of Montesano is the Grays Harbor County Seat. There, the Montesano School District serves students at Simpson and Beacon Elementary Schools and Montesano Junior-Senior High School. When remote learning suddenly became a necessity, Stephanie Klinger, the district director of teaching and learning, and Chris Cady, principal at Simpson Elementary School, faced the challenges with determination and open minds.

The Montesano District had been using the BBS 3D program since the 2016–17 school year, so Cady and Klinger were well-versed in the power of three-dimensional learning and the



Stephanie Klinger



Chris Cady

hands-on investigations that are part of science and engineering practices. They and their teachers found great support from Carolina and the BBS3D@Home lessons and lab kits. “We found it very user-friendly for families and students,” Cady says, “and the teachers were happy to have options for using digital materials, getting printed copies, and printing select materials at their discretion.” They were both very encouraged by seeing the teachers making concerted efforts to continue science lessons during remote learning.

The Montesano District includes many rural households, so Cady and Klinger faced some challenges. In addition to weather-related power outages in the coastal region of the state, many rural areas of the district have limited or no internet connectivity.

Klinger and Cady worked with the

elementary schools in their district to schedule days and evenings when families could pick up science materials at school, print homework assignments, and do other tasks with help from the school.

Klinger and Cady say students always love the science lessons, and the pair certainly did their part in keeping science learning rolling for students!

## Teachers Take the Reins

Candy Hollatz has been teaching in K–6 classrooms for 20 years. Her “happy place” is third grade, which she returned to in the fall of 2020 after five years of teaching fifth-grade classes. Add in the remote learning adjustments, and what a year of transition it was for her!

Hollatz had been using the BBS 3D program for three years and knew firsthand how powerful hands-on learning is for young scientists. When it became clear that remote learning was on the horizon for the 2020–21 school year,

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Hollatz was most concerned about her students getting lesson materials and hands-on experiments that they could successfully complete at home.

“My students missed some of their learning opportunities during the last part of the 2019–20 school year, so stepping into a fully remote third-grade classroom was going to be difficult for some of them,” she recounts. Experience had shown her how much students love doing hands-on science, so she knew that would be the key to recapturing their attention and momentum in the fall of 2020.

“We use BBS3D@Home and the take-home kits on a regular basis,” Hollatz explains. “For instance, we recently completed the weather and climate kit and are now doing forces and interactions. . . . We would plan out for a month at a time, and then parents would pick up once per month. We tagged each packet so parents could easily see which day each one was to be used.”

Hollatz notes how well the BBS 3D program aligns with the NGSS and Washington State Science and Learning Standards. “BBS definitely helps us meet those, especially the phenomenon-based learning and hands-on manipulation standards,” she says. She also appreciates that the BBS 3D program helps her and her colleagues provide three-dimensional learning:

- The lessons and labs build students’ skills in **science and engineering practices**, such as asking questions and defining problems, analyzing and interpreting data, and using mathematics and computational thinking.
- The program builds student skills in **crosscutting concepts**, including recognizing patterns, identifying cause and effect, and understanding the relationship between structure and function.
- The BBS 3D program contains lessons in the four core disciplines: physical science; life science; Earth and space science; and engineering, technology, and science application.



With BBS3D@Home and the take-home kits, parents can easily engage in their child’s science learning.

Hollatz is happy to report that her students’ love of science continued to grow in the remote setting, along with their STEM and three-dimensional learning skills. “The kids love science,” she says, “so anytime I tell them we’re going to do science, they’re excited! It’s huge for them to be able to do that remotely too.”

### The Year in Retrospect

Some of the aspects of the BBS 3D program that made Killough choose to adopt the curriculum in 2015 ended up making a big difference in the ESD’s successful remote learning year.

The fact that BBS 3D is aligned to the NGSS and the Washington State Science and Learning Standards was a key criterion in Killough’s 2015 decision.

During 2020–21 remote learning, the BBS3D@Home lessons provided continuity with those standards during challenging times. The lessons and kits enable students to continue building skills in the three dimensions of science learning: science and engineering practices, crosscutting concepts, and disciplinary core ideas.

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BBS3D@Home lessons and labs build skills that include mathematics and computational thinking.

Killough also appreciated that the BBS 3D program provides the option for digital and/or paper documents for both teachers and students, which he knew could be important in areas where power losses are not uncommon. For example, having the Teacher’s Guide in hard copy made it easy for teachers to continue their lesson planning at any time. That same availability of paper materials became just as important for families living in areas without

online connectivity. The schools could provide those students with printed copies of their lesson materials. Even when schools return to in-person education, BBS3D@Home will continue to support teachers and students during weather-related or other emergency school closings as well as helping students keep up with science learning during short- and long-term absences.

Finally, when Killough was evaluating potential new science curricula back in 2015, one aspect that made a lasting impression on him was Carolina’s Jeff Frates, the regional curriculum sales manager. Frates repeatedly assured Killough that it would be an ongoing partnership between the ESD and Carolina. That partnership has borne much fruit since then as Frates and the Carolina team worked closely with Killough before and during the pandemic.

“I am always still very appreciative of Jeff’s assistance with this program,” Killough says. “Even though he’s based in Spokane now, it doesn’t feel like he’s in Spokane because he’s still very much in contact with us.”

Commitment, ingenuity, and teamwork have proved to be a powerful force in the lives of ESD 113 educators and students. BBS3D@Home will undoubtedly continue to be a trailblazer as remote learning opportunities become more available for families and students.

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