



# Success

Timely tips to improve student achievement

September 2019

**Escape room project tests girls' STEM know-how**

**Akron City's** National Inventors Hall of Fame STEM High School features an escape room that requires students to work together to solve math-based clues for real world design challenges. Teacher **Ben Graber** worked with engineers at nearby Goodyear to design the learning opportunity. For more, go to <http://links.ohioschoolboards.org/SU574>.

**Ohio schools promote cybersecurity careers**

Miami University and **Lakota Local Schools** (Butler) are boosting efforts to train students for the cybersecurity workforce. Miami University is building a Cyber Security Center to provide major and minor training opportunities. Lakota High School is launching a Cyber Security Academy this year with approximately 150 students enrolled. Students will graduate with industry certifications and a pathway to government clearance, according to **Keith Koehne**, executive director of curriculum and instruction at Lakota Local. For more, go to <http://links.ohioschoolboards.org/SU575>.

**How basket weaving, crafts liven up math class**

Middle- and high-school teachers in Juneau, Alaska, learned how to integrate traditional Northwest Coast handicrafts, such as basket weaving, into math lessons. Weaving instructor **Ilskyaalas Delores Churchill** said the process helps teach respect for the environment, and ethnomathematician **Swapna Mukhopadhyay** noted that basket weaving can illustrate concepts such as geometry and measurement in engaging ways. For more, visit <http://links.ohioschoolboards.org/SU576>.

**Tackling the home-school engagement gap**

**Jennifer Ingram**, a third-grade teacher at Saint Mary's Area School District in Pennsylvania, uses a free communications platform to help bridge the engagement gap with parents and families. In this blog post, she shares how she is using the tool to improve families' access to information and to get students excited to share what they are doing in school. For more, visit <http://links.ohioschoolboards.org/SU577>.

**Bringing together young and old to ease the isolation of rural life**

In rural communities, loneliness and lack of social connection are taking a toll on the elderly and young alike. One group in Minnesota is trying to solve the problem by connecting the generations. For more, visit <http://links.ohioschoolboards.org/SU578>.

## Student achievement in-depth

Each month, **Success** brings you a research brief or in-depth article to discuss with board members and administrators.

### Can teaching growth mindset boost test scores?

A large nationwide study has found that teaching ninth graders to maintain a “growth mindset” towards learning—stressing that their minds are like muscles that can get stronger with use—can result in higher test scores.

The study, published in the journal *Nature*, is the largest and most rigorous test of whether mindset training can improve student performance. The concept is well-known in education circles, and it has gained national attention thanks to books and TED talks by **Carol Dweck**, an education professor at Stanford University. Dweck is a co-author of the study, *A national experiment reveals where a growth mindset improves achievement*.

The basic idea is how students’ perceive their brains work can impact how successful they are in the classroom. Those with a so-called “fixed mindset” toward learning believe the ability to do well in school is something that people either have or don’t. But Dweck and her colleagues believe that everyone can learn if they work hard, and that those who see things that way will do better at school than those with fixed mindsets.

For the new study, a team of researchers developed an online training in mindset concepts that was administered to about 12,500 students from 65 schools – a mix of public and private. Data was collected in the 2015-16 school year.

On average, lower-achieving students who took the online training earned significantly higher grades in ninth grade than those who did not, the study found.

But the intervention was not equally successful everywhere. Results were muted when the “peer norms” in a class or school did not value challenge-seeking. The study measured such norms by giving students optional questions that were more difficult and encouraging students to try them. The researchers then classified schools based on how common it was for students to accept the challenge and attempt the harder questions. As the study put it: “The growth mindset intervention effects on grade point averages were larger in schools with peer norms that were supportive of the treatment message.”

“Culture really matters,” said Dweck.

To read the article, which contains a link to the study, visit <http://links.ohioschoolboards.org/SU579>.

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**September 2019**

**Success** is published monthly as a member service by the Ohio School Boards Association, 8050 North High Street, Suite 100, Columbus, Ohio 43235-6481, (614) 540-4000 or (800) 589-OSBA. Kim Miller-Smith, senior student achievement consultant, editor; Jeff Chambers, director of communication services, assistant editor. To download a PDF of this eNewsletter, go to <http://www.ohioschoolboards.org/Success>.