SREB | School Improvement

Promising Practices Newsletter

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Spotlighting promising practices from the 2021 Making Schools Work Conference

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Keys to Classroom Management

By Gail Snider and Jahana Martin, SREB

Good classroom management is about more than keeping students quiet and tamping down on the chaos. It's about forming relationships and creating a classroom environment in which students are engaged, respectful and feel respected. It's about creating a safe space that empowers each student to learn and participate fully in the classroom.

How can teachers tackle classroom management issues and positively impact student achievement? **Riesa Blackwell** and **Ginger Tedder** of **Mississippi State University Research & Curriculum Unit** share easy-to-implement strategies to achieve effective classroom management and increase student success at the secondary school level.

1. **Teach behavior.** It's integral to successful classroom management. "A student may have behavior in one class that you do not want in your class. If you want specific behavior, you have to teach it," says Blackwell.
2. **Set high expectations and promote student engagement** by giving students choice and positions of responsibility. Tedder contends teachers should "make sure your expectations are high, consistent and expressed clearly to your students. Make sure they have a say in your process to create rules and norms in your classroom."
3. **Build relationships with students.** "One of the best responses to misbehavior in the classroom is to build a relationship … and try to learn about [students]," insists Tedder. Understanding the symptoms of bad behavior is also key. Tedder says some reasons for misbehavior are a desire for attention or control, boredom and feelings of inadequacy.
4. **Determine the root cause for why students are acting out.** "When a student acts out, typically what they say is not necessarily what they mean," Blackwell asserts. Take a moment to think about the 'subtitles' – what the student is really trying to express. Behavioral upsets are an opportunity for reflection for the teacher. Blackwell recalls her students would sometimes say she is "doing too much." This prompted her to consider if she was teaching too fast or if the students understood the content. Understanding the 'subtitles' allows teachers to respond to the root cause and not the behavior.
5. **Model expected behaviors** and celebrate successes.

Riesa Blackwell, project manager, Mississippi State University Research & Curriculum Unit

Ginger Tedder, project manager, Mississippi State University Research & Curriculum Unit

Pictures of hand signals that students can use instead of disrupting instruction can be hung on the classroom wall.

6. **Give clear instructions.** Instructional clarity is one of the greatest influences in minimizing student frustration and promoting student achievement.
7. **Use pictures in your instructions.** "Pictures are processed in a different part of the brain than words, and we have better recall of pictures than we have of [written] words," says Blackwell. Students should be able to see what they are expected to do. "We are visual learners. If they can see it, they can do it," Blackwell adds.
8. **Use hand signals to minimize disruptions** in the classroom. The signals can represent anything the teacher and class decide. For example, use signals for "I have the answer" or "May I use the restroom." Once the desired signals are agreed upon, the teacher should post them on the wall.
9. **Find creative ways to encourage students to participate** in class whether they feel confident about the content or not. Blackwell provides examples:

Teachers have many tools available for effective classroom management. A proactive approach to promoting good behavior with a focus on building relationships with each student can help each student and classroom achieve success.

Creative Ways to Increase Student Participation

Eight Raised Hands — Teachers ask a question and do not confirm or provide an answer until eight students raise their hands and answer the question. (Although eight is Blackwell's example, this can be any number the teacher chooses.) If there aren't enough volunteers, students may take the initiative to encourage each other to raise their hands.

All Raised Hands — All students must raise their hands show signals for: I know it, I sort of know it or I don't know it. This helps teachers perform quick formative assessments.

Over the Shoulder — As the teacher walks around the room during independent work time and notices a student with a correct answer, the teacher quietly commends the student and shares they will call on them first.

Class Consultant — A student must share their thoughts with the class about whether another student is providing a correct answer. This is an easy way to refocus a distracted student.

Advance Warning — As students exit the classroom, the teacher tells a student that they will call on them the next day to answer a specific question. This way the student has time to prepare and process an answer.

Answer or Echo — Students are asked a question. They can answer the question or say "echo." The teacher repeats or echoes the question and when another student answers correctly, the first student repeats the correct answer.

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The Fourth Industrial Revolution: Prepare Your CTE Program

By Zach Riffell and Diane James, SREB

The workforce is rapidly undergoing a transition, and technologies like automation and artificial intelligence are replacing millions of workers in many fields, from manufacturing to traditional hospitality and service jobs. While technological advancements may increase productivity and efficiency for employers, they are also increasing the pressure on individual workers to retrain and reskill so they can work with and alongside these technologies.

News headlines suggest that this retraining process isn't happening quickly enough to meet labor market demand. Preparation for these rapidly changing, technology-enhanced jobs can't begin with on-the job training. It needs to begin in schools.

Schools and career and technology centers are laser-focused on preparing students for the demanding jobs of what many call the ***fourth industrial revolution*** — or Industry 4.0 — because the economic consequences are dire for communities if they are not. As in previous industrial revolutions, the rise of new technologies may create more paths to the middle class, but only for those individuals who have the skills to participate.

A Short History of Industrial Revolutions

The first industrial revolution was the transition from hand production to machines that used steam and waterpower. Industry 1.0 helped build a strong middle class in America and in Europe. Industry 2.0 was the technological revolution that brought with it assembly lines and machines that used electricity. Communications tools like the telegraph played a large role in promoting the globalization of ideas and economies. Industry 3.0 led the transition from mechanical and analog control systems to fully digital control systems.

With Industry 4.0, computers make decisions using vast amounts of data, leading to increased system efficiencies. Computers now make predictions about potential issues and opportunities so quickly and accurately that companies can get ahead of diverse economic, supply chain or workforce situations before they take place. Robots of all shapes and sizes can then execute decisions while providing feedback in real time.

Preparing Students for the Workforce

Industry transformations have presented great opportunities to increase the size of the middle class, but these opportunities exist only for those who have the skills needed by the workforce.

Richard Grimsley, director CTE, Dallas ISD

At the 2021 Making Schools Work Conference, districts and schools in **Texas** and **Oklahoma**, among others, shared their programs and strategies for preparing students for jobs of the future. Despite their differences in size or location, their approaches are similar: developing partnerships with business, industry and the community, increasing work-based learning opportunities and offering programs that meet local workforce needs.

Dallas Independent School District is invested in ensuring their students don't become obsolete — now or in the future workforce. The district's bold goal is to not only double the number of graduates in the region who earn a living wage in the next 20 years, but to also eliminate racial disparities in who earns a living wage.

"What really got us started on the right track is connections," says Richard Grimsley, director of career and technical education for Dallas ISD, a district of 228 schools that serves a student population that is nearly 90% economically disadvantaged.

"We felt we needed partnerships to get our students out of poverty and meet the demand of high-wage jobs," says Grimsley. So the district partnered with the city of Dallas, the Dallas Regional Chamber, Dallas College and business and industry leaders in an initiative called *Dallas Thrives*.

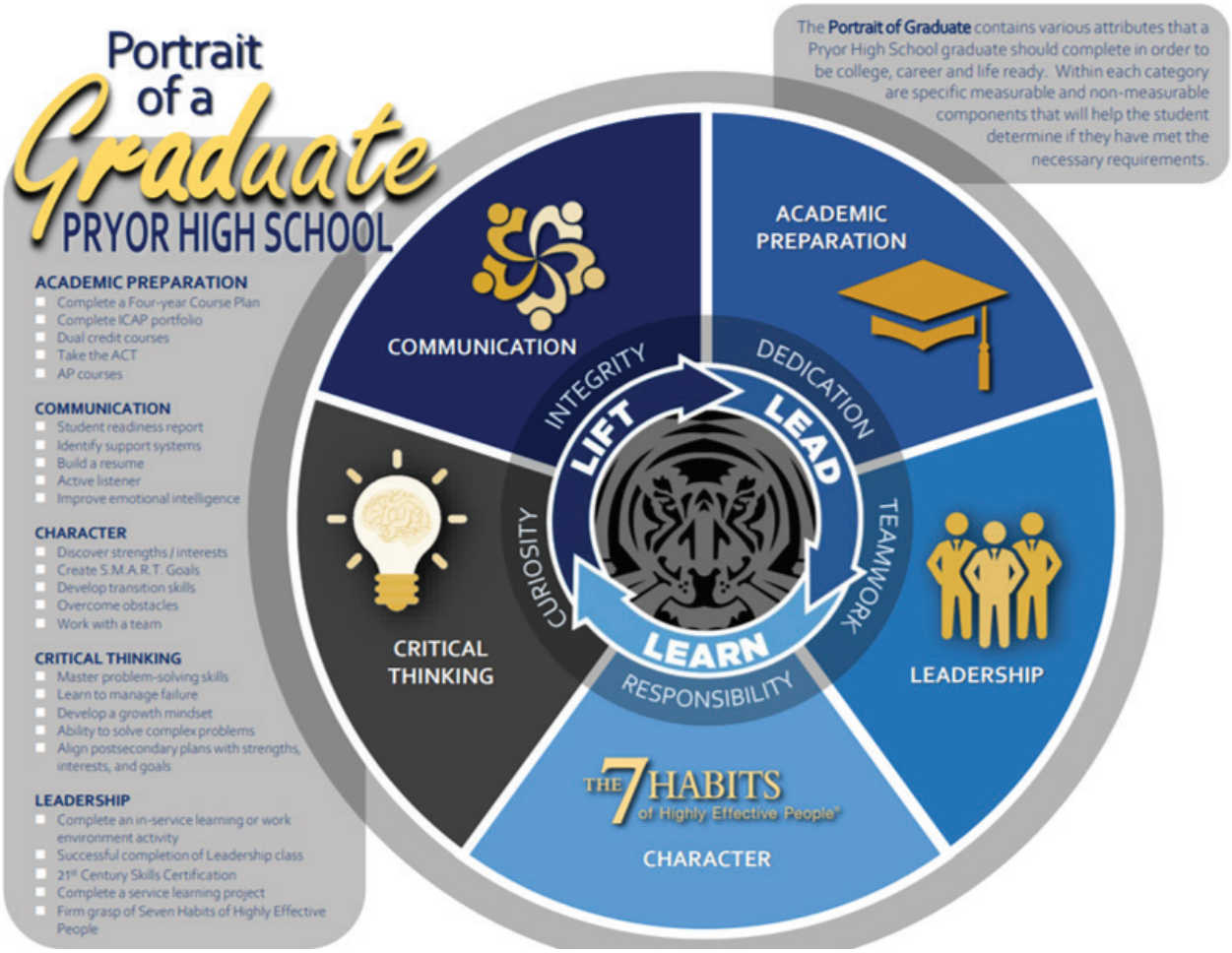
The district is implementing a variety of work-based learning initiatives, themed-based academies, 18 P-TECHs — Pathways in Technology Early College High School, a career-focused grades 9-14 school model that prepares high school students to earn an associate degree — and three career institutes, Dallas ISD's version of a shared-time technology center. Career

Dallas ISD student Joshua Omotoso interned at the Henry B. Tippie National Aviation Education Center (NAEC) at the Dallas Executive Airport, where he helped to create noise-buffering acoustic sound clouds that line the center's hallway.

institutes offer CTE programs of study that meet local workforce needs. Industry professionals teach the courses, and industry partners provide summer internships to juniors and seniors.

Dallas ISD also employs seven individuals in its CTE department who are solely focused on securing industry partners to support the district's CTE campuses and programs. Grimsley said his team has generated relationships with over 200 companies committed to supporting Dallas ISD students and programs.

As early as the middle grades, Dallas ISD students begin exploring a broad array of careers. Every middle schooler takes a career exploration course that helps them select a program of study in either CTE or the fine arts when they get to high school. Work-based learning opportunities like job shadows, jobsite visits and internships are infused in each program of study at every grade level.



Preparing the Future Workforce

Pryor High School in **Pryor Creek, Oklahoma,** is in the process of building CTE partnerships that look much like Dallas ISD's P-Tech program, notes Jenny Peters, an Advanced Career Manufacturing and Automation teacher at the school. The guiding force behind all decision-making is the Pryor High School Portrait of a Graduate, which emphasizes academic preparation, leadership, seven habits of highly effective people, critical thinking and communication.

Advanced Career is a STEM-intensive, career-focused curriculum developed by the Southern Regional Education Board in partnership with teachers, employers and state leaders. The cornerstone of each research-based AC curriculum is an emphasis on hands-on project-based learning that teaches essential academic, technical and employability skills.

Peters was hired out of industry three years ago to jumpstart the school's career pathway programs. "The goal was to provide a college and career-ready curriculum for students to engage in … and prepare students for various careers," says Peters. Students in her program do exceptionally well, scoring the highest on the end-of course assessment of any school in the nation.

"One thing that's really important is student feedback and listening to the students and what they experience," says Peters. Most students in her program participate in project-based learning and work-based learning activities that allow them to engage with industry leaders; these include industry tours and opportunities to receive expert mentoring and

feedback on their public presentations and projects. On a regular basis, Peters invites industry partners to talk to her students about what they do in their daily work and what types of skills students will need in various jobs. Students also benefit from visiting a nearby industrial park and interacting with industry professionals in the course of completing their projects.

Advice for Schools or Centers

For schools or tech centers wanting to get further immersed in preparing students for the Industry 4.0 workforce, Grimsley suggests reaching out to their local chamber of commerce because "they have their thumb on the pulse of what's going on in the community." He also encourages schools and centers to look into partnering with their local United Way and trade associations in plumbing, construction or welding. "It's a way to get to a lot of businesses in a one-stop shop," says Grimsley.

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Mathematics Success Starts in Elementary Schools

By Tim Shaughnessy and Diane James, SREB

Elementary school is a time when students get excited about learning new things, and it's also the best time to lay the foundations for future learning, especially in mathematics. But many young students have misconceptions about what math really is.

Students often think of math as numbers, calculations and operations; they see it as difficult and with little application to the real world. Many feel they need to rely on rote memorization to solve problems. But "all those things they say math is are just computations," says Jason Adair, SREB's program director for literacy and mathematics.

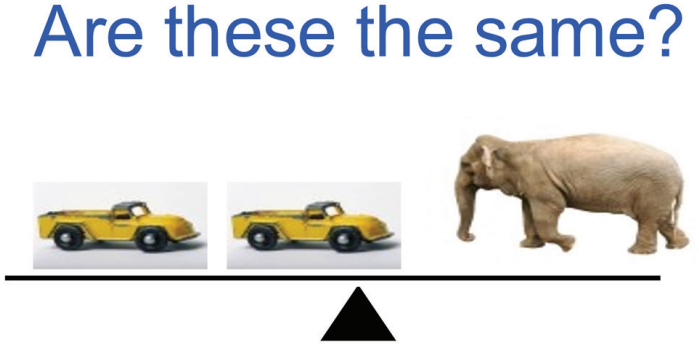
Math is about "complex problem solving, critical thinking, cognitive flexibility… those are the things we want our students to have; not just the ability to memorize formulas, numbers and algorithms," notes Adair. To acquire these skills, students need to begin developing *number sense* in the elementary grades.

Components of Number Sense

Number sense is a student's ability to understand, relate and connect numbers. It involves several skills that are key to mastering math, becoming college and career ready, and securing careers as the scientists, inventors or mathematicians of the future.

Adair and Sarah Inman, a former SREB instructional coach, outline five components of number sense that form the foundation of the elementary grades: Quantity and magnitude, numeration, equality, base 10 and the form of a number.

- **Quantity and magnitude** is not only about rote counting, but also about assigning a number to a set of items, such as 1 puppy, 2 puppies, 3 puppies. Students can also learn to think in terms of units, for example, 3 ducks + 2 ducks = 5 ducks.
- **Numeration** means students learn to identify cardinal numbers (1, 2, 3), ordinal numbers (first, second, third), skip counting (2, 4, 6) and *subitizing* numbers, or the ability to instantly recognize the number of objects without counting them.
- **Equality** means that two items are equal in *value*, not that the two items are the *same*. For example, two trucks may be equal in weight to an elephant, but an elephant is not the same as a truck. Too often, many elementary and middle grades students "see equal signs as the 'answer comes next,' and they don't understand equality," notes Adair.



In this representation of equality, two things may be equal in value (weight) but they are not the same

- **Base 10** is a way of assigning a place value to numbers. It describes how much numerical value each digit has within a whole number. For example, in the number 3,563, the first 3 has a place value of 3,000, 5 has a value of 500, 6 has a value of 60 and the last 3 has a place value of 3. Students need to think in powers of 10, says Inman.
- **The form of a number** can be defined as multiple representations of quantity, ratios and mathematical information. This could be a fraction form, a decimal form, an expanded form or a slope intercept form. One $100 bill is a form. Forms that are equal to the $100 bill are 10 $10 bills or 100 $1 bills. They are different in *form*, but equal in *value*.

Transforming Students From Answer Getters to Thinkers

To be successful in school, students need to do so much more than memorize facts. "We're really seeking creativity and communication to happen in the math classroom," insists Inman. When students have number sense, teachers see an "overall improvement in students' confidence and their ability to do mathematics, instead of just being afraid of not being able to hammer out an answer really quickly," she says. Adair emphasizes, "we want to transform kids from answer getters to thinkers."

Student success with number sense often hinges on their math teacher's understanding and implementation of good questions, problem-solving techniques and flexibility. They may need professional development support to learn how to develop number sense in students.

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SREB's New Powerful Physical Education Instructional Practices

Happy, healthy students. **Every educator wants a classroom full.**

As part of a core curriculum, **physical education** promotes students' physical, mental and emotional health so they can learn and thrive in and out of the classroom. Whatever their unique needs, all students benefit from opportunities to explore physical activities and achieve and maintain a health-promoting level of fitness.

That's why SREB developed a set of **Powerful Physical Education Instructional Practices** that show teachers how to create safe, inclusive learning environments in which students can explore movement and the benefits of physical activity.

Following the practices, teachers draw on state and national standards to design instruction and assignments that encourage students to explore, reflect on and share the benefits of physical activity for physical and emotional health, enjoyment, challenge, self-expression and social interaction.

By creating safe, nonintimidating opportunities for students to develop, practice and assess their skills, teachers can help students of all ability levels develop motor skills, adopt healthy behaviors, enhance their physical fitness, build self-efficacy and emotional intelligence, and demonstrate respect for others while they engage in physical activities.

Lessons and assignments allow students to extend and apply the fitness-promoting strategies they learn and practice in school with their friends, families, teams and communities, too.

The Physical Education practices were originally developed by SREB in partnership with the Hawaii Department of Education and later refined by a team of SREB content-area experts to align with our full suite of Powerful Instructional Practices in every curricular area.

Don't Miss Our Free Webinars With the National Geographic Society!

Sign up for our free webinars and we'll show you how to design rich, exciting opportunities for students to explore their classroom, community and world with the National Geographic Society's extensive library of lessons, units, activities and resources like articles, maps, photographs and videos.

Choose from four webinars: literacy across the curriculum, science, social studies and project-based learning.

Date	Webinar Topic	Sign Up
Monday, March 7	Literacy	Register
Monday, March 28	Science	Register
Monday, April 25	Social Studies	Register
Wednesday, May 11	Project-Based Learning	Register

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— Pete Carroll, head coach, Seattle Seahawks

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Join us this May for two days of game-changing keynote presentations, breakout sessions and networking. Share your experiences and gain powerful strategies for enhancing the impact of your coaching. With support from our school leadership and instructional coaches and national experts, attendees will explore how to:

- **Build Strong Teams:** Establish a shared vision and team culture in which educators learn and grow *together*.
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- **Trust the Process:** Gain *proven* processes, protocols and tools to guide school or district improvement.
- **Overcome Adversity:** Harness setbacks as *opportunities* for learning and growth.
- **Sustain Change:** Empower educators to shift their mindsets and practices in ways that foster student *success*.

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https://www.sreb.org/coaching

Getting Students Pumped Up About Science

By Leslie Eaves, SREB

Students are surrounded by the world of science, from the natural environment they live in, to the smartphones they constantly use, to their own changing anatomy and physiology — and they often don't even know it. Many think of science as just another required course. As educators, we want science to be more than words on a page or isolated experiments for our students. We want to make science come alive for them. We want our students to develop a scientist's eye for looking at the world and understanding its complex, interconnected nature.

To develop an explorer's mindset, students need to *experience* science and do the work of scientists. SREB and the National Geographic Society have teamed up to provide students with rich instructional and exploratory learning experiences. SREB's **Powerful Science Instructional Practices** provide a framework for planning engaging standards-based instructional units. **National Geographic's rich library of curricular and instructional resources** gives teachers a starting point for turning ideas into opportunities for exploration and inquiry in the classroom and the community.

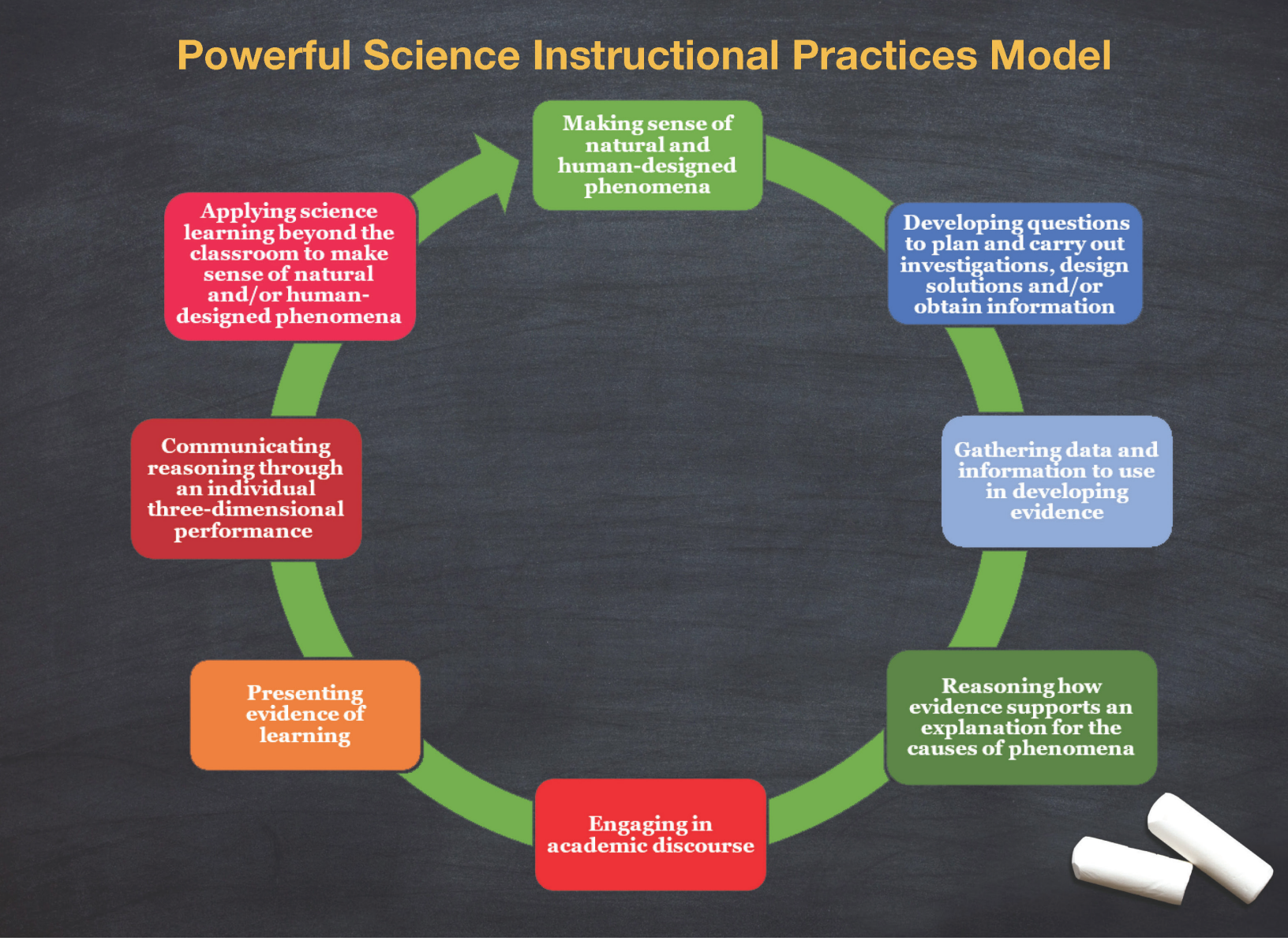
Inquiring Minds

SREB's Powerful Science Instructional Practices go beyond day-to-day teaching strategies: As our instructional model demonstrates, the practices actively engage students in the mindsets and many tasks scientists take on. In the first half of the model, students observe and make sense of natural or human-designed phenomena. Based on their observations, students develop questions and pursue potential answers by investigating, collecting data, obtaining evidence and developing scientifically reasoned statements in response to their questions.

An inquiry-based classroom requires teachers to shift from a demonstration style of teaching to an exploratory style of science education. Instead of completing prescribed labs, students develop their own investigations in response to scientific questions, so they gain a deeper scientific understanding of a concept.

Developing an Explorer Mindset

The National Geographic Society's Resource Library houses hundreds of lessons, units, activities and supplemental materials like articles, maps, photographs and videos that help students develop what National Geographic calls an "Explorer Mindset" and help teachers design engaging, standards-based lessons. Say, for example, that an Alabama elementary school teacher needs to design a unit that aligns with the state's fifth-grade science standards.



She could use National Geographic's Schoolyard BioBlitz lesson to target these two state standards:

- Construct and interpret models (e.g., diagrams, flow charts) to explain that energy in animals' food is used for body repair, growth, motion and maintenance of body warmth, and was once energy from the sun.
- Create a model to illustrate the transfer of matter among producers and consumers, including scavengers, decomposers and the environment. (Science – Grade 5)

In the Schoolyard BioBlitz lesson, students grab clipboards, pencils and magnifying glasses and go into the school grounds or a nearby nature area to observe plants and animals, then connect their observations to life science standards. The teacher assigns groups of students to different sections of the schoolyard and asks them to observe this natural habitat by sketching what they see, collecting leaf samples and describing the behaviors of the creatures they encounter, such as "large bird in a tree" or "ants carrying leaves in a straight path." When they return to the classroom, the teacher asks each group to take turns sharing and commenting on their observations to the whole class. This last step incorporates *academic discourse*, a key component of SREB's Powerful Science Instructional Practices.

Another National Geographic lesson shows students how to examine their BioBlitz data. After sharing and documenting their observations, students develop probing questions based on those observations with teacher support. Their questions then help structure additional classroom lessons focused on understanding how plants and animals get energy to survive.

Understanding Observations

National Geographic also provides grade-level appropriate articles, encyclopedia entries, infographics and other multimedia resources. For the BioBlitz unit, a teacher asks students to read, discuss and answer questions using this infographic on Energy Flow in an Ecosystem. As students pull critical information from the infographic, they return to their original observations to label and diagram sources of energy and how plants and animals use them. For example, how might "ants

carrying leaves in a straight path" connect to matter transfer within this system? As students develop their own model of how energy and matter flow within the ecosystem that exists around their school, they not only develop a richer understanding of scientific concepts, but also are more likely to recall that information and the engaging experience they had months, or even years later, and extend and apply that information to other ecosystems they encounter.

Learn More

To learn more about SREB's partnership with National Geographic and how you can participate in a free professional learning series on inquiry-based learning, contact leslie.eaves@sreb.org.

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