THE GLOBAL PITSCO
NETWORK
September 2020, Vol. 6, No. 2

2020: The good, the bad, and the exciting

Mohit Abraham
International Sales Manager
mabraham@pitsco.com

Dear Partners,

What an interesting year this has been so far! The current pandemic has changed so much of what we're used to – including how we educate students. I am sure all of you have found innovative ways to adapt to this challenge, as have we here at Pitsco. We are constantly looking for new ways to reach students and teachers and continuing to prepare for whatever the future brings. I am happy to bring you our September issue so we can share some of the exciting things going on here.

DOMINICAN EDUCATION AIMS HIGH WITH STEM

We are thrilled to be working with the Dominican Republic to bring STEM education to students throughout the country using Pitsco STEM Getting Started packages. These packages cover eight topics ranging from rocketry to alternative energy to hydraulics to simple machines, among others. Each Getting Started package includes enough consumable materials to serve 20-30 students, and STEM learning values are specified in each subject area.

The Dominican Republic has made a great investment with the STEM packages; I can't wait to see the final impact it makes on the students, the schools, and the country.

If you're interested in our STEM Getting Started packages, or any of our other STEM solutions, contact our International Sales Enablement Specialist Annie Edson at aedson@pitsco.com.

THE DRONES – AND STEM BOXES – HAVE LANDED!

Back in February, we promised you drones – and now they're here! OK, maybe not the drones themselves, but everything else you need to create an engaging drone course for your students. From the drone arena to the field elements to the curriculum and competition package, our offerings can help you prepare your students for the many STEM careers available via drone training.

We're also excited about our new STEM Boxes, created in response to the COVID-19 learning crisis.

Check out the Product Highlight articles to learn more about both items.

This has been a difficult year, but we're continuing to find exciting new ways to bring STEM education to students. And we're here to help you do just that, so don't hesitate to reach out.

'I LEARN FROM THEM'

In 2015, Chander Malik decided he wanted to do something different with his life. An entrepreneur who started Trans American Information Systems, Inc. in 1991, Malik felt a need to have a greater impact on the world. "I felt I should be contributing to society," he explained. So, at the age of 55, he took a year's sabbatical and traveled to his native India.

When Malik first began his journey, he had only a vague idea of what he wanted to do. "I had a dream that I would teach maybe three or four kids and see how it went." He certainly had no clue that his small idea would bloom into the vision it has become today – STEAM Vision – that includes innovation, entrepreneurship, social outreach, and diversity/inclusion programs.

STARTING SMALL

Malik's first school visit was in Delhi, where he was born and raised. Here, he met with STEAM educator and entrepreneur Dharam Raj Panwar. Panwar had tutored others to put himself through engineering school, so it didn't take long for him to see Malik's vision of helping underprivileged students and agree to join him. "I met him at 10 in the morning, and by 10:20, he was working for me," said Malik.

With a pilot project in mind, the pair set up a smart lab, with one interactive SMART Board™ and a computer, at a local boarding school that serves some of the poorer Delhi students. They then began adding e-books to the SMART Board to help acclimate students to the new technology. After that came the introduction of STEM and then the application of STEM concepts through robotics. At that point, Malik knew they were onto something. "Students will learn anything, whatever they need to learn, to get the robot working," he said. "So, we taught them engineering, coding, physics,

(continued page 2)


Chander Malik

mathematics. . . . Whatever it took, they were willing to learn it if it meant working with the robot."

THE ROAD TO ROBOTICS SUCCESS

The next step was getting these students into robotics competitions so they could practice their language and socialization skills. "They were so smart!" Malik said. "The only thing they were lacking was the communication in English. We realized we had to do something different." Malik and Panwar convinced the school to make English the main language spoken while the students are in class, and the students' English proficiency soared.

In 2016, Delhi students began participating in *FIRST*® Tech Challenge competitions using TETRIX® kits. This has brought them to a completely new level of socialization and outreach. They regularly interact with other *FIRST* Tech Challenge teams from all over the world, using Skype to both learn and teach new coding and robotics concepts.

CHANGING MIND-SETS, CHANGING LIVES

STEAM Vision's efforts have had some truly amazing results. One of these is the diversification of students, which happened organically.

"At the Vivekananda Center [in Delhi], we teach students before and after school and on the weekends, similar to tutoring," said Malik. "We teach them science, English, and math during the week, and on the weekends, they learn technology – STEM education and robotics." Malik soon noticed that his technology classes were made up of 70 to 80 percent girls. "In India, if something goes wrong, we send our sons to fix it, not our daughters." These female students, eager to learn about coding and robotics, intrigued and inspired Malik. "I want to pick that gender-biased mind-set apart," he said. So, he and his team began working with these girls separately, encouraging them to really delve into STEAM subjects.

And the girls soon showed how capable they were, collaborating and creating innovative apps aimed at helping their communities: an app to help users track purchases and budget, an app that enables young people to type their struggles into their phone and yet still get the help they need (the issue gets sent to an adult who can then reach out to the student), and an app that eliminates early-morning noise pollution by placing a tracker in trash trucks that sends a signal to users' phones, alerting them that the trash truck is near so they can bring their trash to the curb. So far, these enterprising young ladies have created 37 different apps, simply because they have an environment that encourages brainstorming, collaboration, and invention.

In addition to changing mind-sets around traditional gender roles, STEAM Vision also endeavors to change the way students view learning. "We have introduced a social entrepreneurship model," Malik explained. "Yes, we want students to learn the ins and outs of various industries, but we also want them to go beyond that. We want them to see themselves as what we call social entrepreneurs: creators and agents of change."

Patterned after *FIRST* organization's mentor-based methodology, this new model fully immerses students in the process of creating and entrepreneurship, including learning the subject matter, doing hands-on activities, studying industry skills with their mentors, managing a team, doing budgets, connecting with the community, and so much more.

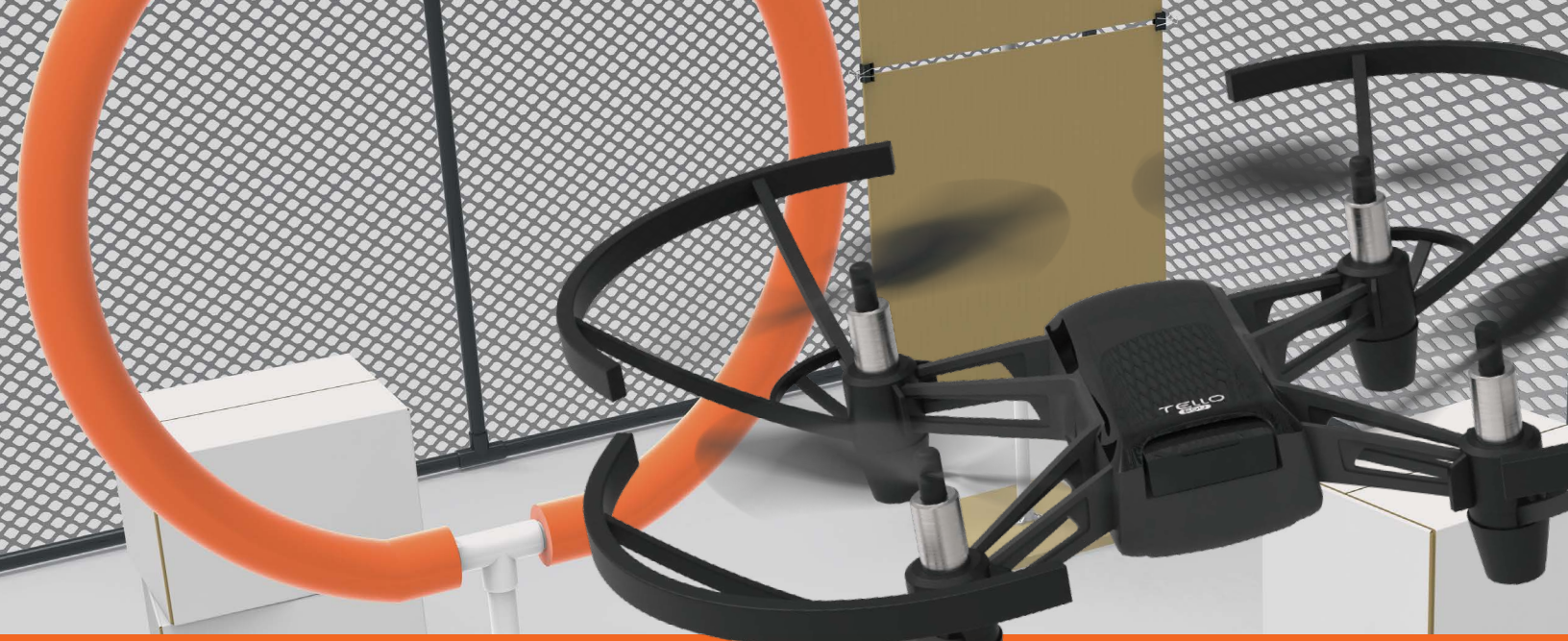
OUTSTANDING OUTCOMES

Malik is beyond pleased with how far STEAM Vision has come in just five short years. The model he set up has spawned six different initiatives, including another robotics club in Cameroon, Africa! When an engineer in Cameroon contacted STEAM Vision for help with a new group, Malik quickly jumped at the chance to reach even more students through coding and robotics. "We provided them logistics and ideas and game matter," he said. The Programming Club-Cameroon now boasts 45 young members, all attending Cameroon's first programming club for free.

Additionally, there's GENIUS: Girls Empowering New India Using STEAM; two Delhi *FIRST* Tech Challenge teams; the Sindhu Tech Center outreach in Leh, Ladakh; an after-school makerspace-type program for underprivileged students in Delhi; the Dream Lab in Delhi, a STEAM Education program for students from the most rural and remote parts of India; and Drishyam, an initiative that enables visually impaired students to use technology to innovate solutions for their own unique challenges.

"I went to India in November 2015, hoping to teach four or five kids," said Malik. "Right now, we are doing free education of robotics, STEM education, and other skill-based programs for more than 1,000 kids."

The efforts of STEAM Vision have been telecast on various news channels all over India and viewed by 2.5 million viewers. But it's the students themselves that Malik is most proud of. Their excitement and engagement, their thirst for knowledge and change is what makes the various STEAM Vision programs work. Students on *FIRST* teams, initially too shy to even say their own names, now regularly interact with other teams and students around the world, presenting at technology fairs and other venues. Indian girls, traditionally almost bystanders in STEAM learning, are taking control of their own destinies and creating apps and programs to improve their own communities. The students have truly become the teachers. "Some people ask me, 'What do you teach those kids in India?'" Malik said. "My answer is that I don't teach them. I learn from them." P



Product Highlight:

Pitsco drone arena and curriculum package are ready for classrooms!

In our February 2020 issue, we gave you a sneak peek at our upcoming drone arena and curriculum. Now, we're happy to report that both are available for purchase!

Drone piloting has become the latest new STEM skill available to students. Proper training in drone flight and safety can prepare students for a multitude of careers such as drone pilots, software developers, construction inspectors, and more. And now, schools can provide these connections with the newly developed drone curriculum, arena, and materials from Pitsco Education.

CAREER-RELEVANT CURRICULUM

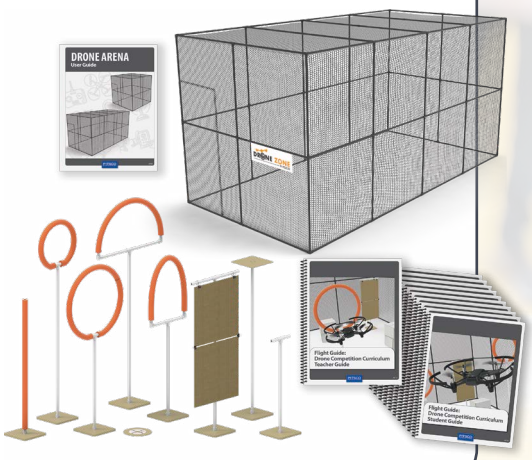
The *Flight Guide: Drone Competition Curriculum* created by our team of education experts uses the excitement of competition to introduce students to the many applications drones have in today's world through both manned and autonomous flight operation. Designed for ages 11-14, the curriculum consists of a guide with 12 activities and four competitions as well as resources such as career research links, preflight check, teacher notes, and a glossary with basic flight terms and drone principles.

As students progress through the activities, they learn about real-world flying rules and safety regulations as well as the principles and terminology of quadcopter flight. Culminating competitions pose scenarios that enable students to test their new skills, perhaps rescuing victims from an explosion or capturing footage of a car accident, engaging teamwork and critical-thinking skills as well.

The curriculum has been written and tested using the Tello EDU drone, but it is open-ended, enabling teachers to use any drones available to the classroom.

TWO GREAT WAYS TO GET STARTED!

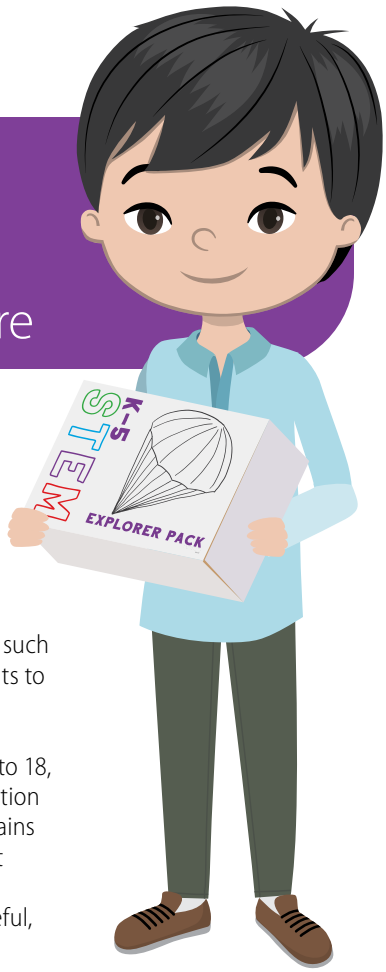
Teachers ready to reach new heights should take advantage of the **Drone Flight Guide Curriculum and Field Elements Kit**, which includes the *Flight Guide: Drone Competition Curriculum*, a teacher flight guide, 10 student flight guides, and all competition field elements necessary (drones not included) to start a competition. Those wanting to make sure those drones stay in an enclosed area should consider the **Drone Flight Guide Curriculum and Field Elements Kit with Arena**, which includes all the essentials of the aforementioned kit with the addition of the 10' x 20' drone arena. (A 10' x 10' drone arena is also available for purchase, sold separately.)



Ready to help students embrace the drone industry?
Contact our International Sales Enablement Specialist Annie Edson at aedson@pitsco.com.

Product Highlight:

Pitsco STEM Boxes let hands-on, minds-on learning take place anywhere



Teaching and learning look different now for educators and students across the globe as learning environments continue to be in flux. As a result, millions of students are in danger of missing out on crucial education milestones. Pitsco's new STEM Boxes, created in response to the COVID-19 pandemic, were designed to reach students of all ages and socioeconomic backgrounds.

For nearly 50 years, Pitsco has seen the effectiveness of hands-on learning and the engagement it brings to students. Hands-on experiences develop skills such as collaboration, effective communication, and resiliency, which prepare students to face the unknowns of today's world and the future.

Pitsco STEM Boxes offer strong, engaging, hands-on education that can be implemented in any type of learning environment. Suited for learners ages five to 18, these kits, filled with robust activities, provide a go-to, complete, hands-on solution whether classrooms are in person, virtual, or a hybrid of the two. Each box contains the materials and at-home curriculum with step-by-step instructions to support four to five projects and 15 activities per student. Each activity is designed for a 20-minute experience at minimum, making it possible for hours of fun, purposeful, student-led learning to happen anywhere.

ENGAGING STEM ACTIVITIES FOR ALL AGES

Three grade-level based boxes are available:

- **STEM Explorer Pack:** Intended for students ages five to 10, the STEM Explorer Pack features activities across the STEM spectrum that incorporate reading, art, and more! Students can make tilting mazes, bird feeders, musical instruments, parachutes, and large structures.
- **STEM Creator Pack:** This pack is intended for students ages 11 to 13. Projects that span the STREAM spectrum are catapults, balloon cars, da Vinci bridges, students' own inventions, and friction climbers.
- **STEM Innovator Pack:** Intended for students ages 14 to 18, all activities in this pack aim to have learners create, discover, and innovate! Projects include catapults, trebuchets, kites, and solar cars.

STUDENT-LED LEARNING IN SCHOOL, AFTER SCHOOL, OR AT HOME

As educators around the world continue to juggle health, safety, education, and social needs for their students, Pitsco STEM Boxes help schools adapt to the ever-changing learning environments. These STEM Boxes are ideal for learning at home but can also be used as a center activity in the classroom, summer camp, or after-school program. And now, STEM Boxes and activity guides are available in both English and Spanish!

To learn more about Pitsco STEM Boxes, access the online brochure or contact International Sales Enablement Specialist Annie Edson at aedson@pitsco.com.

PITSCO EDUCATION

The Global Pitsco Network
September 2020
Published periodically during the school year

CEO:
Harvey Dean
hdean@pitsco.com

President:
Lisa Paterni
lpaterni@pitsco.com

Executive VP & Chief Strategy Officer:
Stephan Turnipseed
sturnipseed@pitsco.com

Vice President, Education & Executive Editor:
Matt Frankenbery
mfrankenbery@pitsco.com

Communications Manager & Editor:
Tom Farmer
tfarmer@pitsco.com

Writer & Assistant Editor:
Patty Cooke
pcooke@pitsco.com

International Sales Manager:
Mohit Abraham
mabraham@pitsco.com

International Sales Enablement Specialist:
Annie Edson
aedson@pitsco.com

Lead Graphic Artist & Layout:
Jason Redd
jredd@pitsco.com

P.O. Box 1708
Pittsburg, KS 66762

79179