



2023

NEXT

Transform your classroom

V5 **50**
YEARS

Teq[®]



The Teq you're meeting today has come a long way from where we started as a small family business. Today, we're **innovating the entire learning experience** by bringing all of the dynamic moving parts of education together into a complete thought.

We start with the **STEM technology** that enables students to learn by doing, whether it's robotics, 3D printers, or the tools to learn coding.

Then we offer **iBlocks**, our customized project-based learning content. iBlocks are built around your goals for your students, and crafted as a way to integrate technology and 21st century skills-building into curriculum.

With our online professional development tool, **OTIS for educators**, we formulate sessions that will boost technology skills and provide new ways to engage students and improve instruction.

We also provide the educational technology that enhances your classroom, from **interactive displays**, interactive playgrounds, and storage solutions, to the sound systems that ensure everyone hears – and is heard.

Finally, we provide the **furnishings** and equipment you'll need for your ultimate learning experience, be it a classroom, active learning space, or makerspace.

Classroom transformation can begin at any time, because it starts with you.

The STEM products, interactive displays, and custom learning content we offer are just tools to support you. Your classroom is where the real innovation happens.



Here's what comes NEXT

STEM Technology	4
Project-Based Learning with iBlocks	61
Professional Development	64
Educational Technology	70
Active Learning Spaces	84
Grade Band and Compatibility Chart	88
STEM Product Alignment Chart	90

STEM Technology

NEXT

STEM is the perfect place to start transforming your classroom. By giving students the right tools and technology, you can spark curiosity, learning, and inquiry-based thinking.

Makerbot	6
Ultimaker	8
Formlabs	10
Fork Farms	12
Cubelets	14
Hummingbird	16
KIBO	18
littleBits by Sphero	20
Osmo	22
Ozobot	24
pi-top	26
ROBOTIS	28
SAM Labs	30
Sphero	32
UBTECH	34
Wonder Workshop	36
Veative	38
zSpace	40
KUBO	42
MAD-learn	44
Makey Makey	46
Mayku	48
Strawbees	50
Full Spectrum Laser	52
Bloxels	53
Piper	54
Kai's Clan	55
Matter and Form	56
micro:bit	57
Merge	58
STEM Fuse	59



What is it?

With the ability to print out virtually any 3D object you can imagine, MakerBot 3D printers give educators an engaging way to teach 3D design and printing skills to their students. Thanks to the simple set-up experience, easy-to-use hardware and software, and variety of educational and support resources available, Makerbot provides an easy way to introduce the 3D design and printing process to your classroom.

Tell me more!

3D printing offers a new approach for educators to engage students in critical thinking and problem-solving – and it brings lesson plans to life. Getting to design a 3D model and then see it come to life as a 3D print is exciting, keeps students engaged, and helps them gain a better understanding of the concepts they’re learning.

Does your 3D printer need a home? With the 3D Printer Cart from Copernicus, you get a classroom storage solution that’s compact, mobile, and built to last. With your printer and supplies all in one place, you can print anytime, anywhere. See page 71 for more cart information.

GRADE BAND RECOMMENDATION: Grades K – 12

www.teq.com/makerbot

Possibilities:
3D printing doesn't have to be limited to a tool for STEAM subjects - 3D printers can also be integrated into **English language arts, social studies, and more!**



Explore integrating this product into instruction with **OTIS for educators'** PD course: **MakerBot Replicator+ Basics**



otispd.com/events/view/13953



LESSON PLAN

BEAUTIFUL TOPOLOGY



- 1 Have students create a möbius strip with a piece of paper and tape. Define topology, and discuss the innate beauty that many see in it.
- 2 Research the topological works of Eva Hild, a sculpture artist, and sketch an inspired design.
- 3 In a CAD software, try to recreate your paper möbius strip or Eva Hild inspired design.
- 4 3D print your design for display.

BUILD CUSTOM CONTENT WITH

iBlocks
iblocks.com

Ultimaker



What is it?

Ultimaker's line of 3D printers are the most industrial-grade desktop 3D printers on the market. Ultimaker's revolutionary active leveling and simple swappable nozzle systems lend the printers their high uptime and reliable results.

Tell me more!

A 3D printer is more than just a printer — it's an amazing tool for 21st century learning. You can use it to engage students in hands-on STEAM activities that help them learn about the engineering design process, and practice their critical thinking skills as they work through the 3D design process. Ultimaker also includes Cura, the industry-leading open-source preparation software that turns your 3D model into a file your printer can use.

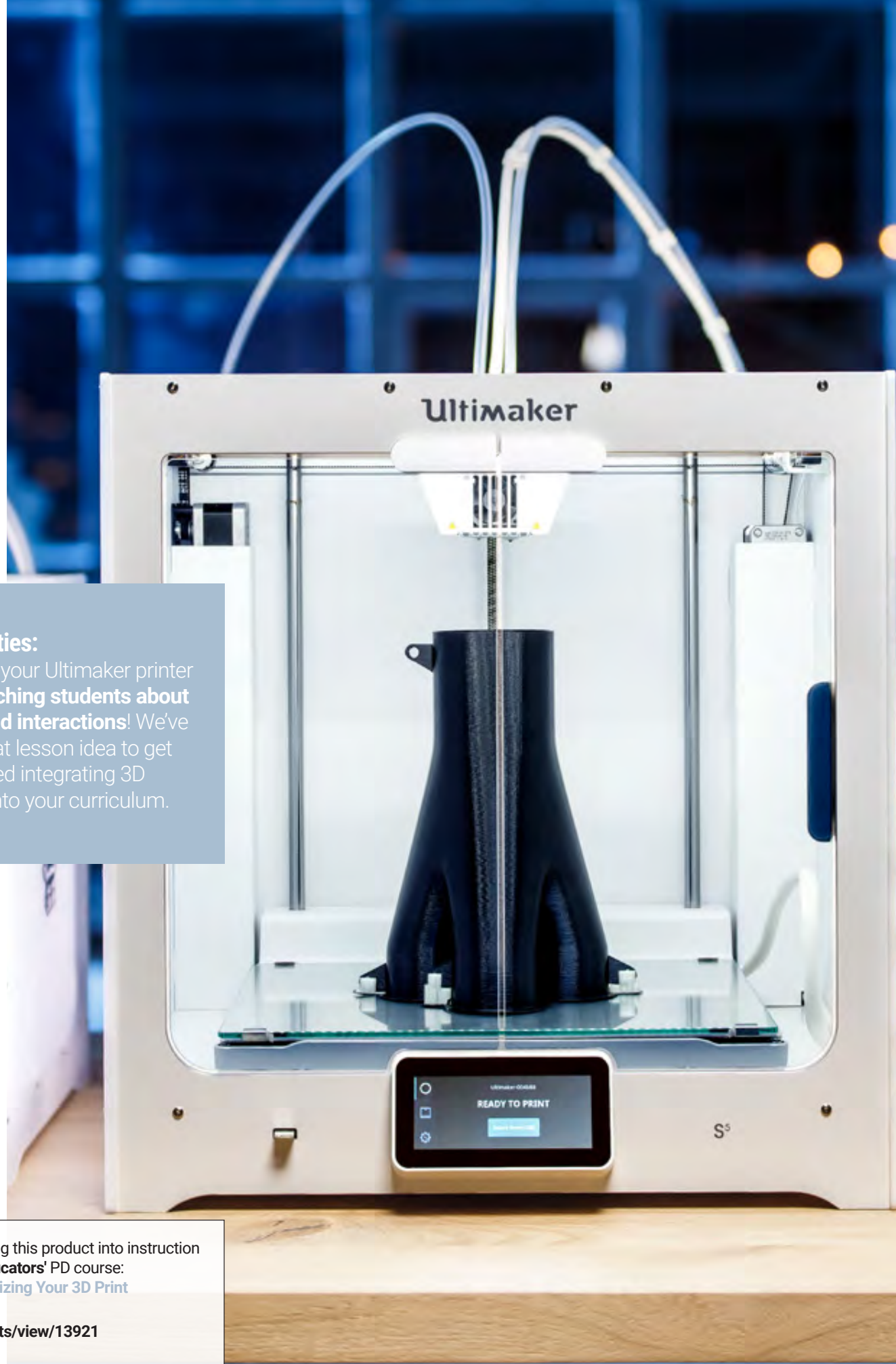
Need a cart for your new 3D printer and all the gadgets and gizmos that accompany it? Check out the 3D Printer Cart from Copernicus. It's compact, mobile, and built to last.

GRADE BAND RECOMMENDATION: Grades K – 12

www.teq.com/stem/ultimaker-3d-printer

Possibilities:

Leverage your Ultimaker printer while **teaching students about forces and interactions!** We've got a great lesson idea to get you started integrating 3D printing into your curriculum.



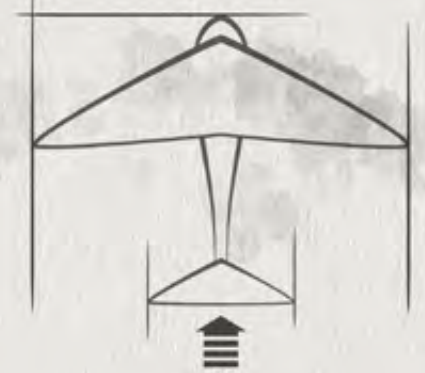
Explore integrating this product into instruction with **OTIS for educators'** PD course: **Ultimaker: Optimizing Your 3D Print**



otispd.com/events/view/13921

LESSON PLAN

GLIDER CHALLENGE



- 1 Study the components of gliders and the forces of aerodynamics - lift, thrust, drag, and weight.
- 2 Using Tinkercad, design a glider body and modular wings to be the fastest model in the class.
- 3 Print your glider. Then, test your glider and compare the results with other glider designs in the class.
- 4 Redesign your wings or glider body to provide more lift, or to make your glider go farther.
- 5 Retest your new design.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



What is it?

Formlabs 3D printing uses linear illumination and a flexible tank to turn liquid resin into flawless prints. The printers constantly monitor print performance and have integrated sensors to maintain ideal print conditions, allowing students to focus on bringing their designs to life.

Tell me more!

Formlabs is advancing education to prepare students for the future – a future that includes digital manufacturing. 3D printing with Formlabs unlocks outstanding learning outcomes and gives students the tools they need to develop, communicate, and share their ideas.

GRADE BAND RECOMMENDATION: Grades 6-8, 9-12
www.teq.com/browse/stem-technologies/Formlabs

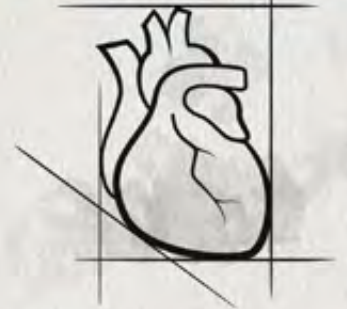
Possibilities:

Allow students to **create their own functional and high-quality prototypes** in record time. The custom-designed laser light and mirrors deliver accurate, repeatable, and high-quality prints.



LESSON PLAN

ANATOMICAL MODELING



- 1 Research a particular organ or system – what is its function? How about its anatomical features? What are some issues/diseases affecting this organ or system?
- 2 Design a model of the organ or system.
- 3 Print the model using Formlabs.
- 4 Students will give a presentation on the organ/system, its features and functions, and a disease/disorder particular to it. They will use the model to demonstrate during their presentation.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



What is it?

Flex Farms are easily deployable, vertical hydroponic farming systems that make growing simple, efficient, and engaging. Discover the power of fresh, accessible food and empower a community Flex Farm of advocate growers.

Tell me more!

Growing hydroponically is a powerful teaching tool. Students can learn about STEM, nutrition, sustainability, and global citizenship. Growing fresh food provides a unique, hands-on experience and empowers students to think creatively while engaging with their communities.

Possibilities:

Flex Farms are carefully designed to create an optimal indoor growing environment while being highly resource efficient. They're portable, only require a standard electrical outlet, and are less than 10 square feet of space. Each year, a **Flex Farm can grow over 394 pounds of fresh, healthy food!**



Explore how to use this product with videos on harvesting different types of crops, such as: **Harvesting Your Branching Crops**



otispd.com/events/preview/13894

GRADE BAND RECOMMENDATION: Grades 3-5, 6-8, 9-12
www.teq.com/browse/stem-technologies/fork-farms



LESSON PLAN FOOD DESERTS



- ① Research food insecurity and food deserts - how does this affect an area near you?
- ② Plan crops to plant based on research to help a specific local community.
- ③ Observe growth and plan/adjust factors involved in growth for the highest possible yield.
- ④ Students will harvest and distribute the crops (farmers market, food pantry donation, etc.).

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com

cubelets

ROBOT BLOCKS



What is it?

Cubelets are pre-programmed robot blocks that can be connected to build different types of robots. While building with Cubelets, students learn the basics of robotics and coding through a tactile and visual process.

Tell me more!

With the ability to code any Cubelet to do something new, students learn computational thinking and creative problem-solving skills, while educators are given the flexibility to teach computer science and coding concepts with or without student devices. The best part of building with Cubelets is that there's no wrong way to combine them. This allows students to experiment as they build which puts a focus on curiosity, invention, and learning.

GRADE BAND RECOMMENDATION: Grades K – 8

www.teq.com/stem/cubelets

Possibilities:

Did you know you can use Cubelets to **teach concepts like speed and velocity**? You can also conduct experiments with certain parameters to observe and then alter the behavior of your Cubelet robot.



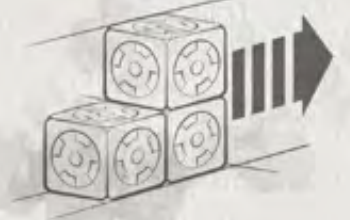
Explore integrating this product into instruction with **OTIS for educators**' PD course: **Creative Prompts with Cubelets**



otispd.com/events/view/14133

LESSON PLAN

STOP AND GO



- 1 Choose a few Cubelets and create a robot that drives.
- 2 Select an additional Cubelet to add on that affects how your previous invention navigates. For example, you can try adjusting the robot's speed based on ambient light.
- 3 Add an obstacle to the environment and see what happens when your Cubelet invention approaches it. Now modify your robot so that it stops moving before it hits the obstacle.
- 4 Investigate what happens when your Cubelet invention goes near the edge of a table. Then, redesign your invention to detect the edge and stop itself before it falls.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com

HUMMINGBIRD[®]

ROBOTICS KIT



What is it?

Founded at the CREATE Lab at Carnegie Mellon University in 2010, Hummingbird allows students to learn computer science and develop computational thinking skills by providing flexible and inspiring robotics products leveraging the micro:bit platform.

Tell me more!

Hummingbird Robotics kits allow students to build, customize, and program their own robots with micro:bit using craft materials and the electronic components provided. The Finch robot allows students to learn computer science and coding by having them program the robot in multiple block and text-based coding languages on any device.

GRADE BAND RECOMMENDATION: Grades K – 12

www.teq.com/browse/stem-technologies/hummingbird

Possibilities:

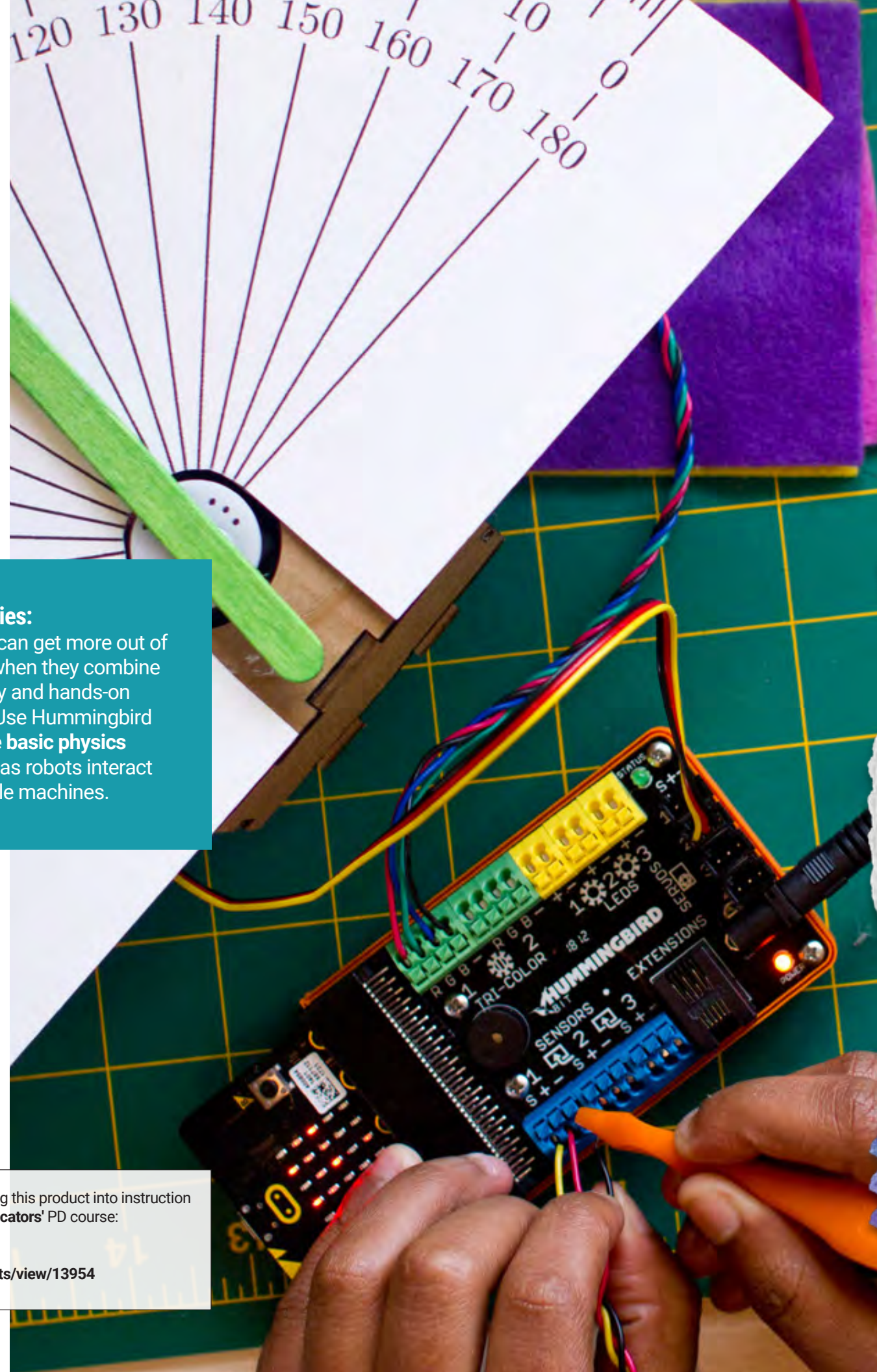
Students can get more out of robotics when they combine it with play and hands-on learning. Use Hummingbird to **explore basic physics concepts** as robots interact with simple machines.



Explore integrating this product into instruction with **OTIS for educators'** PD course: **Intro to micro:bit**

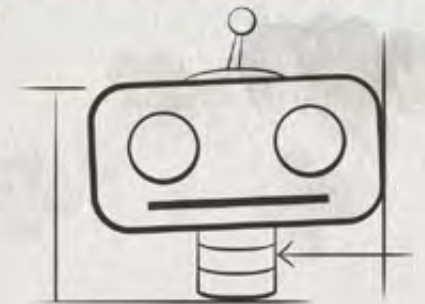


otispd.com/events/view/13954



LESSON PLAN

ROBOTIC RUBE GOLDBERG MACHINE



- 1 Challenge your students to design, build, and program their own robot to perform a simple task.
- 2 Form groups of 2-3 students to incorporate at least two sensors, two simple machines, as well as normal, everyday items.
- 3 Have students keep a lab journal to document their design, build, and programming process in order to refine and troubleshoot.
- 4 Each group will present their set-up to the class and explain their simple machines.

BUILD CUSTOM CONTENT WITH

iBlocks
iblocks.com



What is it?

KIBO is a robot that young children can build, program, and decorate. KIBO lets kids' imaginations soar – all without requiring any screen time!

Tell me more!

Introducing young children to important coding and programming concepts is essential, and KIBO provides a friendly, hands-on way to familiarize students with the basics while still being about play. The idea behind the KIBO robot was to take objects that are familiar to young children – in this case wooden building blocks – and use them as the foundation for introducing programming and block-based coding.

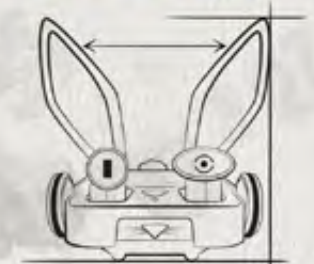
Possibilities:

Use KIBO as a tool to teach everything from **life sciences to visual arts**. In our lesson idea, students use KIBO to learn about their favorite animal and represent its habitat.



LESSON PLAN

MY PET KIBO



- 1 Research an animal of your choosing. Find out where it lives, what it looks like, what sounds it makes, and what is needed for it to thrive.
- 2 Then, have students decorate KIBO to look like the animal they've been researching. Use arts and crafts to recreate its prime environment for survival.
- 3 Now it's time to train the pet KIBO! Use the microphone to record sounds the animal makes. Next, create a program that lets your KIBO pet "speak" whenever a predator comes by (reenact this by clapping hands to make a loud noise).
- 4 Show off your pet KIBO in the environment you created for it while illustrating to the class the specific habitat of your animal, and any interesting facts you learned along the way!



Explore integrating this product into instruction with **OTIS for educators'** PD course: **Teaching Early Ed with KIBO**



otispd.com/events/view/14095

GRADE BAND RECOMMENDATION: Grades Pre-K – 2

www.teq.com/stem/robotics/kibo

BUILD CUSTOM CONTENT WITH



iblocks.com



littleBits™



What is it?

littleBits by Sphero are pre-engineered building blocks that snap together with magnets to create circuits. Each Bit has a specific color-coded function that students can build with to create anything from robots, digital instruments, to whatever invention they can imagine!

Tell me more!

littleBits by Sphero inspires students to become creators and inventors of technology – not just consumers of it. Students learn that the road to an invention is not a straight line: they need to create, test, play, and redesign as they go. littleBits by Sphero kits are equipped with Bits, lessons and accessories to work hands-on with circuitry, hone critical thinking skills, and learn important STEAM concepts. Step-by-step invention guides, easy-to-teach lessons, and curriculum linked to standards are available on *littleBits by Sphero Classroom* (classroom.littlebits.com), a free online platform.

GRADE BAND RECOMMENDATION: Grades K – 12

www.teq.com/stem/littlebits

Possibilities:

Robotics + art? Yes! Have students research their favorite artist and use littleBits by Sphero to **recreate a famous painting**. Check out our lesson idea for the details.



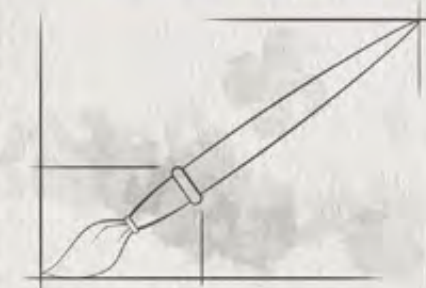
Explore integrating this product into instruction with **OTIS for educators'** PD course:
Let's Get Rolling with littleBits by Sphero



otispd.com/events/view/14186

LESSON PLAN

CREATE A ROBOTIC ARTIST



- 1 Research your favorite artist. What materials did they create with? What techniques did they use?
- 2 Build the Drawbot and try to recreate your favorite painting or artistic design.
- 3 Now, take your creativity up a notch. Add additional components to help Drawbot make a new design!

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



What is it?

With Osmo, students explore, learn, create, and interact with digital games in a whole new way. Osmo merges the power of physical play with the digital advantages of real-time feedback. Students will collaborate to manipulate tangible game pieces and coding blocks as they play digital learning games.

Tell me more!

As students engage with Osmo apps, the Osmo reflector 'sees' the physical play pieces on a surface, such as a table, and cleverly engages, prompts, encourages, and corrects players. Osmo's feedback component, and conscious blend of the physical and digital worlds, change the way kids collaborate, create, think critically, and communicate. The Osmo apps are built around topics like math, puzzles, coding, business, spelling, and drawing, and Osmo also provides lesson plans that educators can integrate into any classroom.

GRADE BAND RECOMMENDATION: Grades K – 6

www.teq.com/stem/osmo

Possibilities:

Blending the best of hands-on and digital learning creates so many opportunities to engage students with content. Did you know that you can even use Osmo to get students **familiar with Geometry concepts?**



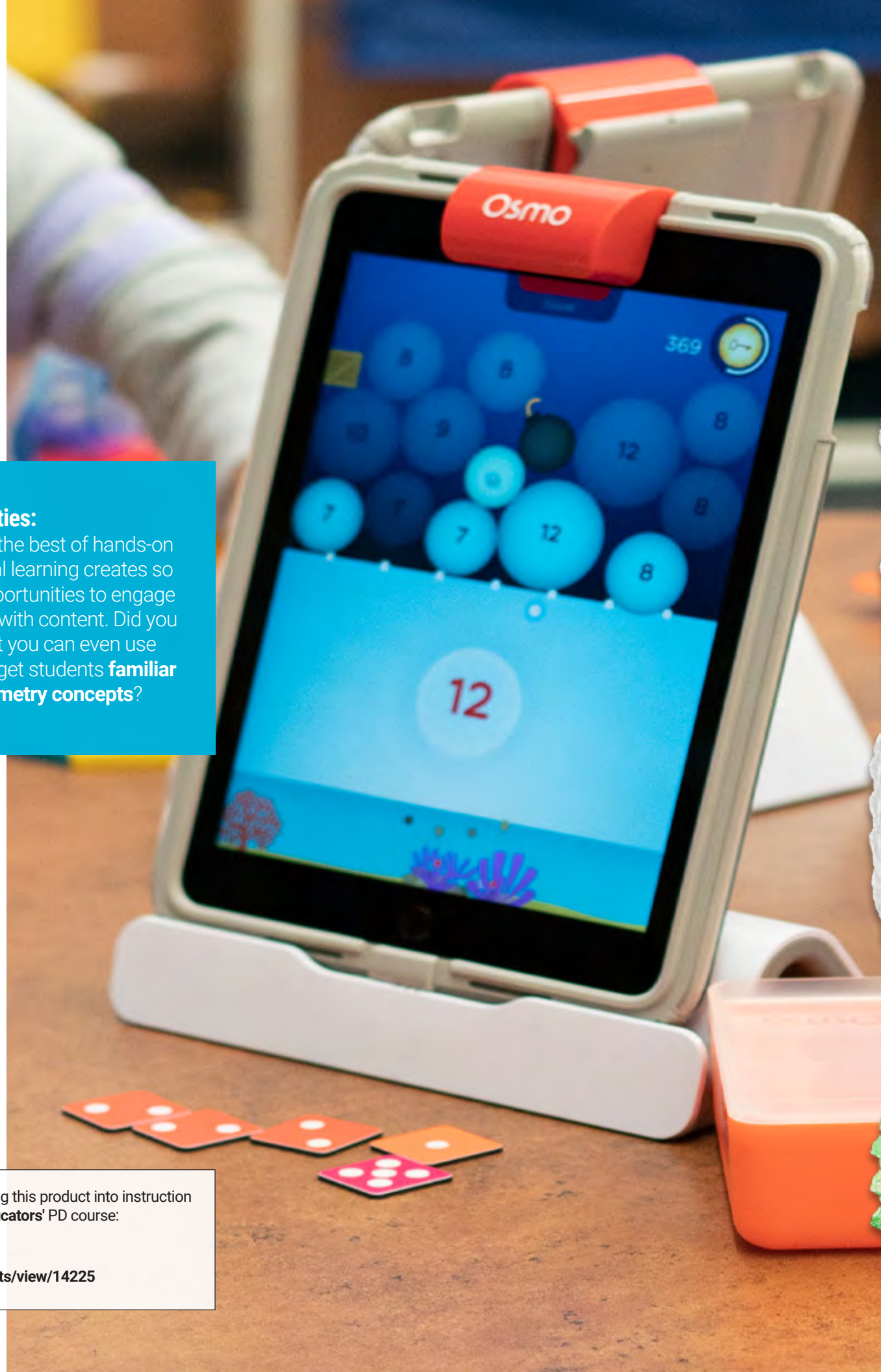
ipad is required, sold separately



Explore integrating this product into instruction with **OTIS for educators'** PD course: **Osmo Basics**

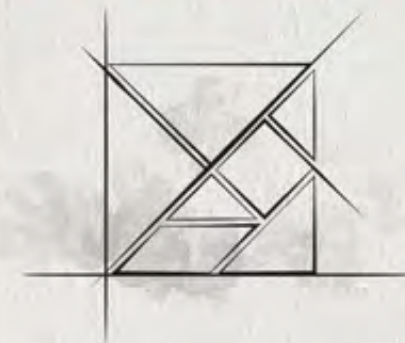


otispd.com/events/view/14225



LESSON PLAN

TANTALIZING TANGRAMS



- 1 Review geometric shapes with your students. Ask for volunteers to identify shapes by name.
- 2 Ask students to identify shapes that can be used to make other shapes. Provide examples at the front of the room.
- 3 Introduce tangrams as a puzzle comprised of seven shapes that are arranged to form a design or image. Use the Osmo "Introduction to Tangram" game to get students familiar with the concept.
- 4 In groups, use the Osmo Tangram Tiles and play the "Osmo Tangram" game. Have students work through the four levels.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com

Ozobot



What is it?

Ozobot enables students to learn robotics and programming with a hands-on approach. They're appropriate for all skill and grade levels from K-12, and are a great tool to get students out of their chairs and collaborating with each other as they learn by doing.

Tell me more!

With the stroke of a marker, students draw color codes that the Ozobots respond to. By experimenting with different combinations of these codes, students control the movement and trajectory of their robots — all while learning the fundamentals of coding. Students can also build upon the knowledge learned from using the color codes and use the OzoBlockly coding editor to further their skills with block-based coding.

GRADE BAND RECOMMENDATION: Grades K – 12

www.teq.com/stem/ozobot

Possibilities:

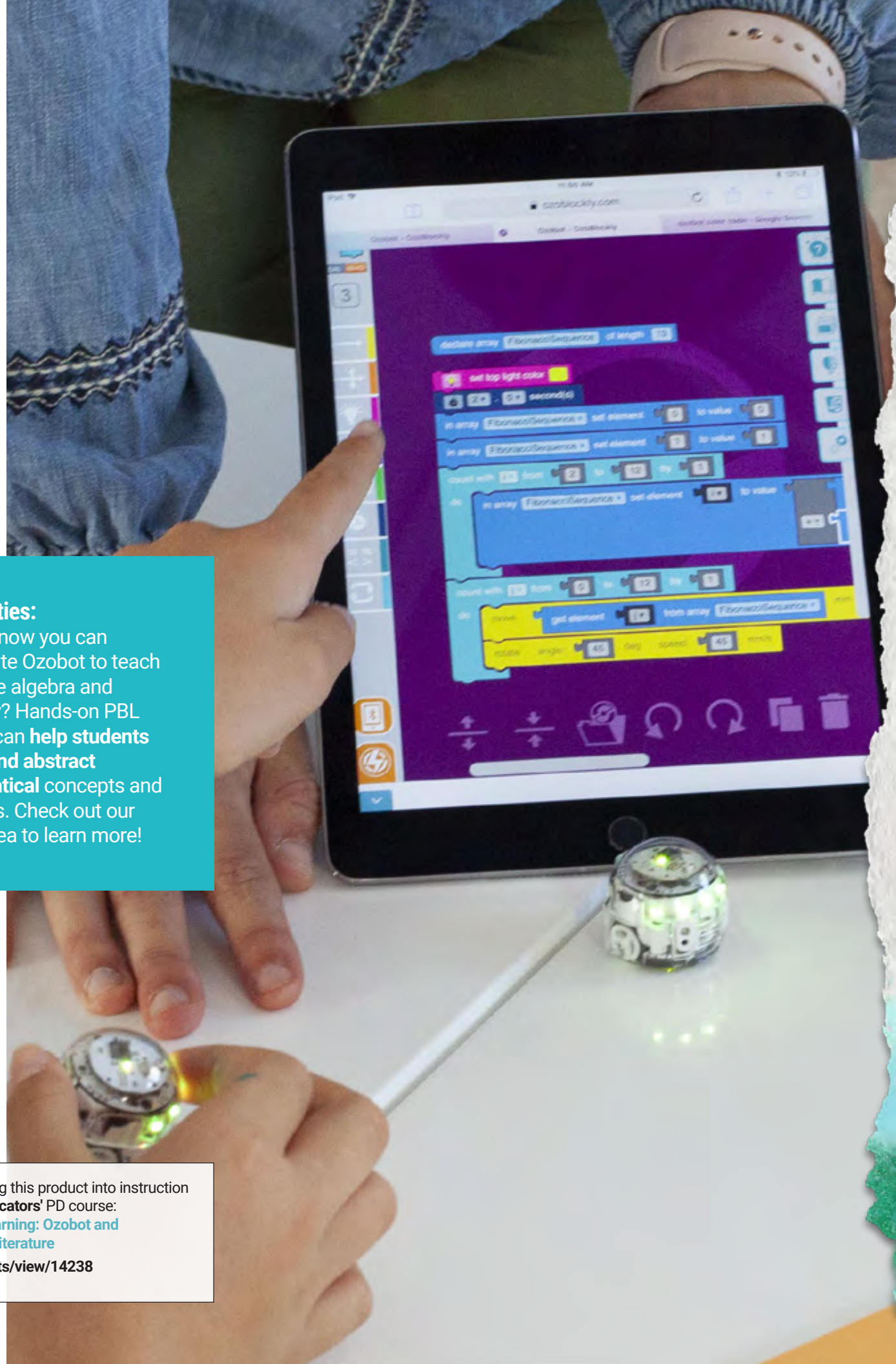
Did you know you can incorporate Ozobot to teach things like algebra and geometry? Hands-on PBL projects can **help students understand abstract mathematical** concepts and equations. Check out our lesson idea to learn more!



Explore integrating this product into instruction with **OTIS for educators'** PD course:

Tech-Infused Learning: Ozobot and Perspectives in Literature

otispd.com/events/view/14238



LESSON PLAN

QUADRATIC EQUATIONS



- 1 Choose a quadratic equation.
- 2 Identify key features such as solutions, axis of symmetry, point of reflection, and the vertex.
- 3 Using a large piece of paper, draw your quadratic equation with color-coded Ozobot actions for each of the key features identified.
- 4 Run your Ozobot through the drawn equation and explain why it is performing each action in each specific location.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com

pi-top



What is it?

pi-top is a Raspberry Pi-powered microcomputer with its own unique operating system. Using pi-top, students learn how to code in Python. They'll also be able to create awesome DIY devices while taking their computer science knowledge to the next level.

Tell me more!

Included with the pi-top is a foundation kit that provides a base plate, LEDs, resistors, buttons, and more, allowing students to create and code their own physical computing projects. The pi-top[4] is a microcomputer that can be attached to electronics products and inventions like robots and drones.

Possibilities:

Use your pi-top to **engage your students in STEAM challenges.**

In our lesson idea, students build on their programming skills and create a responsive program in Python.



Explore integrating this product into instruction with **OTIS for educators'** PD course:
Pi-top Sounds with Speaker, PULSE and Sonic Pi
otispd.com/events/view/14238

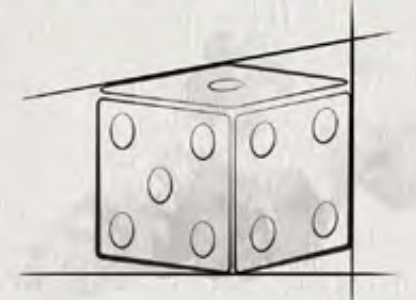
GRADE BAND RECOMMENDATION: Grades 6 and up

www.teq.com/stem/pi-top



LESSON PLAN

ROLLING THE DICE



- 1 Using your pi-top [3] or [4] and the Foundation Kit, challenge students to create dice that can "roll" a number in response to their code.
- 2 First, have students create dice out of a consumable like cardboard and use the LEDs to signify the numbers on the die.
- 3 Next, have students use their pi-top to write the code that will "roll" their dice.
- 4 Give students time to test and tinker as they make any changes to their dice and/or code to make sure it functions properly.
- 5 Invent a classroom game that incorporates the students' dice!

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



ROBOTIS

What is it?

Robotis offers a variety of buildable and programmable robotics kits. While learning to build and program the robots, Robotis allows students to learn physical engineering and computer science skills. The Robotis kits are geared for specific grades, and range in complexity and content.

Tell me more!

Robotis is about more than building a robot — each kit focuses on a particular scientific concept. Robotis kits are also designed as a progression, so students will gradually learn different STEM concepts as they advance through each kit. Students get a strong, immersive STEM experience that incorporates robotics with the study of centrifugal and centripetal force, speed, leverage, inertia, and more.

GRADE BAND RECOMMENDATION: Grades K – 12

www.teq.com/stem/robotis

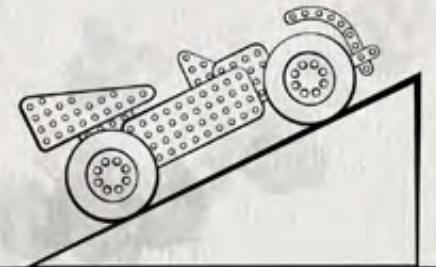
Possibilities:

Teach **concepts like kinetic and potential energy** with Robotis, and make learning tangible for students. Check out our lesson idea to see how you can use Robotis to get students learning by doing.



LESSON PLAN

**I THINK I CAN,
I THINK I CAN...
GET UP THE RAMP!**



- ① Using the ROBOTIS DREAM II kits, build a few robots that are able to move across a table width distance.
- ② Design an obstacle for your robots to face such as a steep ramp to climb.
- ③ Observe what happens when each robot attempts your challenge.
- ④ Discuss why some robots may have failed the challenge while others succeeded.



Explore integrating this product into instruction with **OTIS for educators'** PD course:
ROBOTIS: PLAY Series



otispd.com/events/view/14021

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



What is it?

SAM Labs are easy and engaging app-enabled, programmable blocks consisting of inputs and outputs that each have a function of their own. By connecting the physical blocks to the SAM Space app or Google's Workbench, every block sequence can accomplish a new solution - press a button to turn on a light, or use a light sensor to activate an alarm. Take learning further by integrating micro:bit with SAM Labs in the new Learn to Code Kits.

Tell me more!

Discover the fun in coding by connecting software and hardware with step-by-step lesson plans that make learning about coding an accessible, experimental, and fun interactive experience. Connecting physical SAM Labs blocks to the SAM Space app with the simple touch of a button opens a new world of engineering and programming by visualizing and coding in a simple and intuitive way. Use visual drag-and-drop, flow-based coding with SAM Space, and progress to Google's Workbench with SAM blocks and micro:bit!

GRADE BAND RECOMMENDATION: Grades 3 – 5
<https://www.teq.com/stem/sam-labs>

Possibilities:

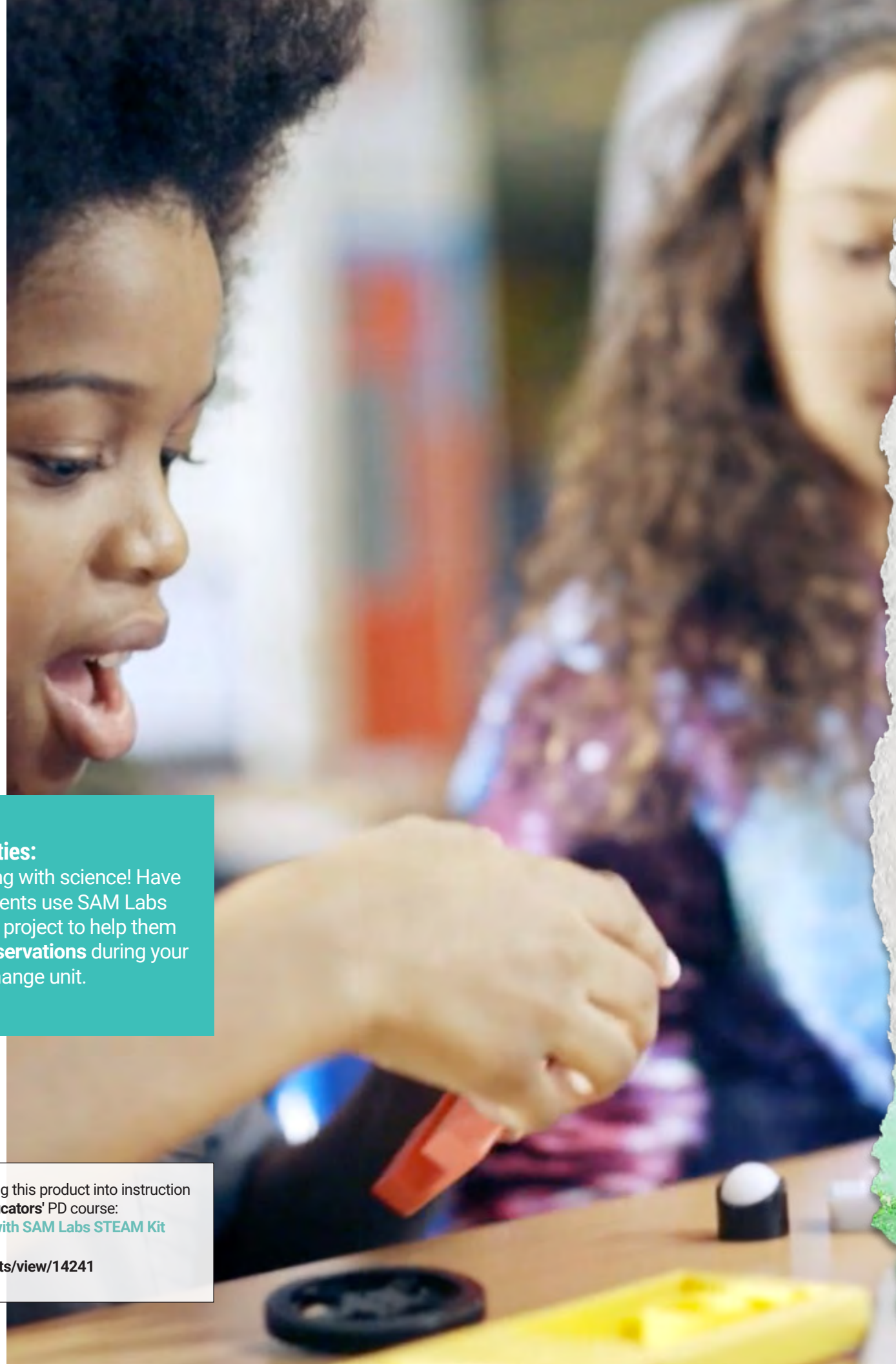
Mix coding with science! Have your students use SAM Labs to code a project to help them **make observations** during your Phase Change unit.



Explore integrating this product into instruction with **OTIS for educators'** PD course: **Getting Started with SAM Labs STEAM Kit**



otispd.com/events/view/14241



LESSON PLAN

PROPERTIES OF MATTER



- 1 Have students set up an automatic camera for observations. To do this, use Camera Blocks and Time Trigger blocks. Have students set each timer trigger one minute apart.
- 2 Then, place an ice cube on a plate and have the students position their devices in such a way that the camera is pointed at the area where the ice cube can be viewed easily.
- 3 Since the trigger blocks and camera blocks are connected, the camera will automatically take photos of the ice cube throughout the day. Have students review the photos and observe what happens when heat is applied to the ice cube during the day.
- 4 Challenge! Debug the code. How do you know if the camera has taken a picture? Add sound to be sure.

BUILD CUSTOM CONTENT WITH



iblocks.com

sphero



What is it?

Sphero's RVR, BOLT, SPRK+, and Mini are codable robots with durable shells that take hands-on learning up a notch. Filled with programmable sensors like motor encoders, LED lights, accelerometers, gyroscopes, and more, Sphero robots will foster a love of robotics, coding, and STEAM principles.

Tell me more!

By taking students "beyond code" with collaborative STEAM activities, Sphero lays the foundation for computer science through discovery and play. Students program the BOLT, SPRK+, and Mini robots by drawing, using block-based code, writing script code all within the Sphero Edu app. Sphero brings coding fundamentals together in cross-curricular activities, and teaches the four C's of 21st century learning: creativity, collaboration, critical thinking, and communication.

GRADE BAND RECOMMENDATION: Grades 3 and up

www.teq.com/stem/robotics/sphero

Possibilities:

Use Sphero in your next math lesson to **help students learn new concepts** (and practice coding at the same time)! In our lesson idea, students learn about angles while working hands-on with the Sphero robot.



Explore integrating this product into instruction with **OTIS for educators'** PD course: **Digital Storytelling Around the Campfire with Dash and Dot**
otispd.com/events/preview/14203



LESSON PLAN

PERFECT SPHERO-SQUARE



- 1 Challenge your students to create a "perfect" square. Review the angles that comprise a square, and the equations that help us arrive at this number.
- 2 Have students open the Sphero EDU app and drag four "roll" blocks into the program, with the angles increasing by 90 degrees.
- 3 Have students run the program they built. What can be noticed about the angles in their square? Are they displaying 90 degree angles?
- 4 Introduce "delay" blocks and their purpose, then test their functionality. Now have students run the program with these blocks included. Have students discuss their impact on their final square.

BUILD CUSTOM CONTENT WITH

iBlocks
iblocks.com



UBTECH
EDUCATION

What is it?

UBTECH Education offers programmable robotics kits for beginners to advanced users. As students move through their vertical alignment program, they will conquer multiple projects that increase in complexity as their learning progresses. The robotics kits invite students to build, unbuild, and assemble the pre-made models or their own creations by using their knowledge of robotics and coding concepts.

Tell me more!

UBTECH Education kits combine hands-on robotics activities, cutting-edge technology, and high-quality NGSS-aligned curriculum to prepare students for success in STEM classrooms and careers. The robotics and engineering progressive program offers engaging, exciting supplements to math, physical and life sciences, and language arts instruction while students learn collaboration, project management, troubleshooting, and computational thinking skills.

GRADE BAND RECOMMENDATION: Grades K – 12

www.teq.com/stem/ubtech

Possibilities:

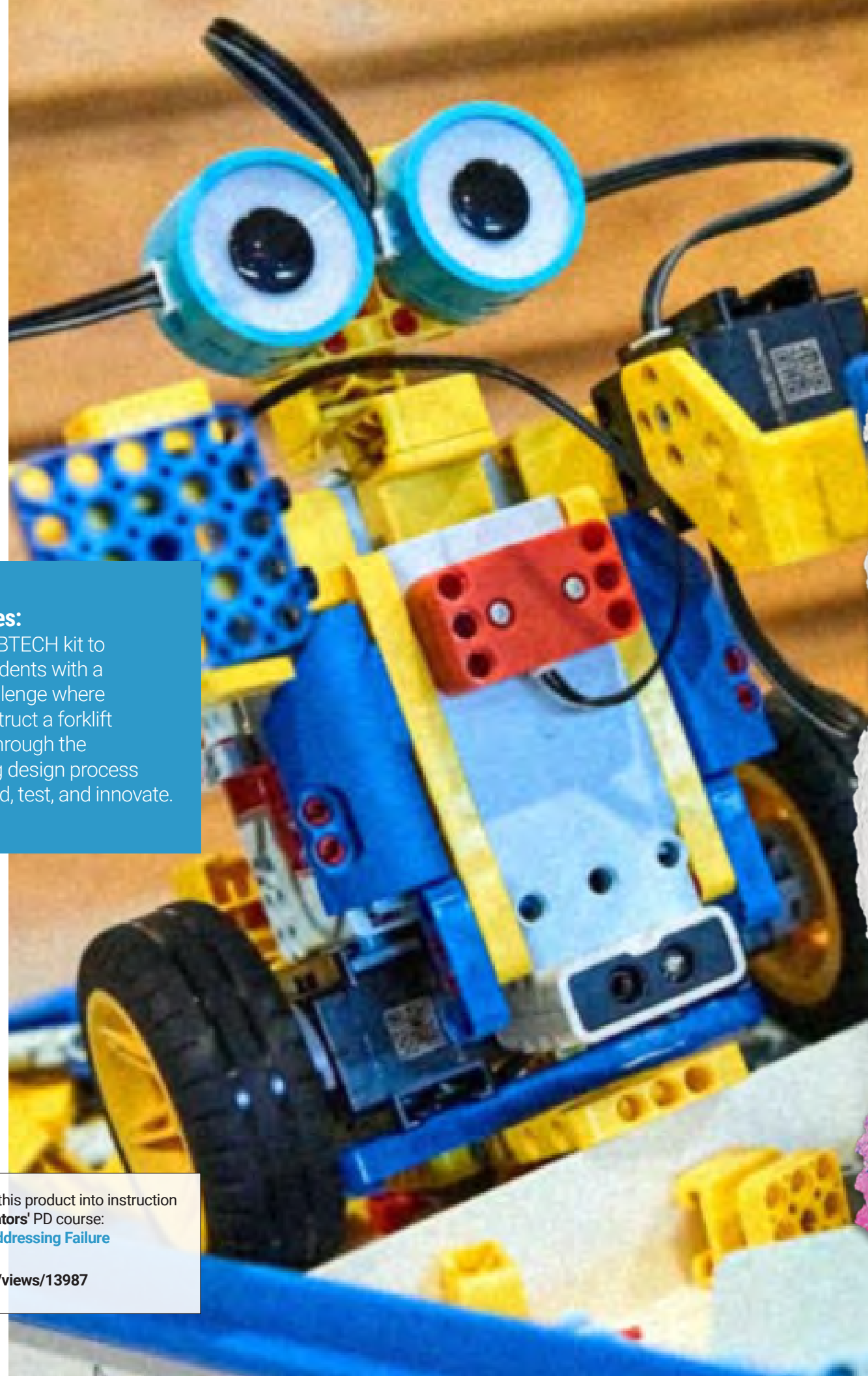
Use your UBTECH kit to engage students with a design challenge where they'll construct a forklift and work through the engineering design process as they build, test, and innovate.



Explore integrating this product into instruction with **OTIS for educators'** PD course:
Growth Mindset: Addressing Failure



otispd.com/events/views/13987



LESSON PLAN

FUN WITH FORKLIFTS



- ① Using the UKIT Intermediate Kit, have students work in groups to build multiple of the "Forklift" pre-made instructional model.
- ② Explore engineering design concepts to build a vehicle to lift objects.
- ③ Observe what happens when each robot attempts the challenge.
- ④ Discuss which robots' engineering design concepts failed, which accomplished the challenge, and explore ideas for improvement.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com

wonder workshop



What is it?

Wonder Workshop provides two playful robots for elementary and middle school students: Dash and Dot. With the robots' unique design, engaging personalities, mobility, and built-in programmable LEDs and sensors, the Wonder Workshop robots get students excited about coding and computer science.

Tell me more!

The Wonder Workshop robots are a great tool to introduce programming and coding to students in a way that's both engaging and playful. They might look like toys, but the bots are powerful tools to explore the world of robotics in the classroom. With Wonder Workshop, robotics becomes an activity that involves the entire class, and has students thinking, problem-solving, and learning together.

GRADE BAND RECOMMENDATION: Grades K – 8
<https://www.teq.com/stem/wonder-workshop>

Possibilities:

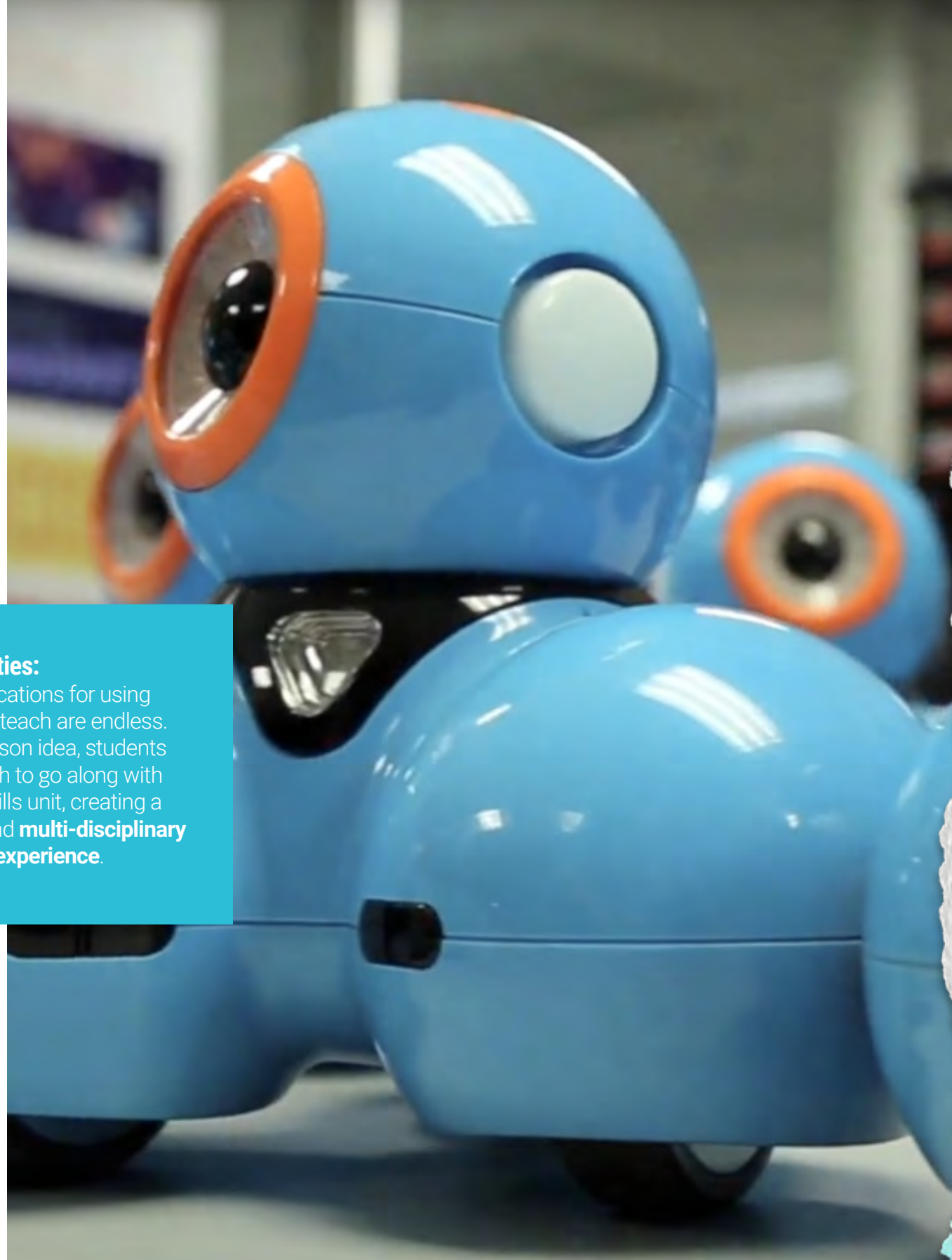
The applications for using robots to teach are endless. In this lesson idea, students code Dash to go along with a Map Skills unit, creating a vibrant and **multi-disciplinary learning experience**.



Explore integrating this product into instruction with **OTIS for educators'** PD course:
Tech-Infused Learning: Geometry with Dash

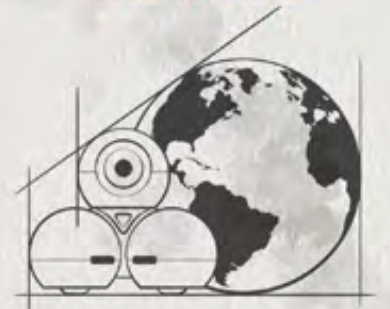


otispd.com/events/preview/14183



LESSON PLAN

DASH DISCOVERS THE WORLD



- 1 Lay an oversized map of the world on the floor of your classroom.
- 2 Code Dash to travel to three different countries on the map.
- 3 Have students create a story about Dash's adventures travelling the world.
- 4 Give students time to present their story. Stories can be in the form of a coded display with Dash, a stop-motion video, an essay, poem, and more!

BUILD CUSTOM CONTENT WITH

iBlocks
iblocks.com

VEATIVE



What is it?

Veative gives students the opportunity to interact and engage with their subjects in a virtual reality (VR) environment. VR deepens connections to complex concepts through realistic and experiential learning.

Tell me more!

Veative's learning content comes pre-loaded on the EduPro VR headset. With it, you have access to an educational library of over 550 interactive and immersive VR content modules. The content is aligned to national and state standards, is written around research-based instructional practices, and also offers formative assessment data and analytics for educators. Additionally, a special focus on STEM allows students to explore concepts that cannot be visualized with the "chalk-n-talk" method of teaching.

GRADE BAND RECOMMENDATION: Grades K – 12

www.teq.com/stem/veative



Possibilities:

VR opens doors for students to gain real-life experiences that would otherwise be impossible. In our lesson idea, students explore the pyramids of Ancient Egypt and then **connect them to math concepts** and 3D design.



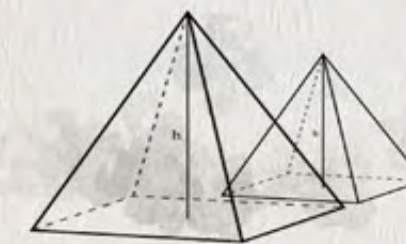
Explore integrating this product into instruction with **OTIS for educators'** PD course:
Veative Basics



otispd.com/events/view/14310

LESSON PLAN

PYRAMIDS OF GIZA



- 1 Have students locate "The Pyramids of Giza" virtual tour and dive right in.
- 2 Explore the Great Pyramid, the Pyramids of Khafre and Menkaure, and the Great Sphinx. Make sure to pay special attention to the size and dimensions of the pyramids.
- 3 With the information gained from their VR tour, have students use a CAD software (e.g., Tinkercad) to create a scaled 3D model of one of the pyramids, exploring the math behind the pyramids.
- 4 If your students have designed a digital 3D model, have them practice their 3D printing skills and produce a scaled replica.
- 5 For a low-tech option, have students produce their scaled model using paper, cardboard, or a similar consumable.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



What is it?

zSpace laptops and computers combine the best of augmented reality (AR) and virtual reality (VR) to create the ultimate immersive learning experience. The zSpace Learning Lab includes a suite of educational software, hundreds of learning activities, and zSpace units. Through life-like exploration, zSpace levels the playing field of student experience.

Tell me more!

zSpace encourages students to inquire, take risks, and solve problems while building the background knowledge to be successful. From creating original experiments to designing new objects, zSpace elevates opportunities for students to apply their learning. With zSpace, students can experience depth perception, kinesthetic realism, and the ability to investigate and look around the environment and/or object they are studying.

Possibilities:

Bring your next **Anatomy and Physiology lesson to life** for students with zSpace and its accompanying apps. In our lesson idea, students explore the cranial nerves and then devise a real-world test to see the nervous system at work.



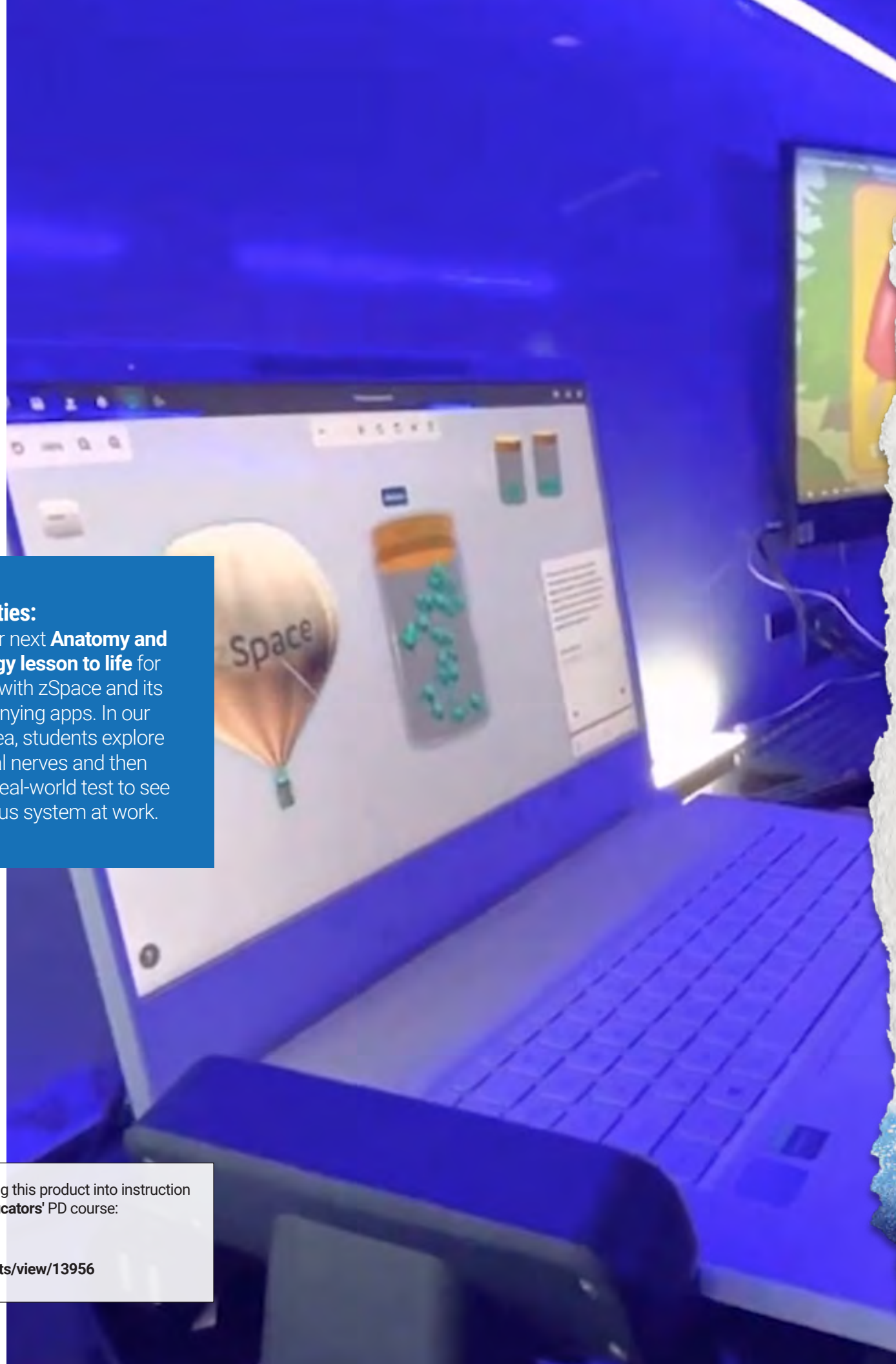
Explore integrating this product into instruction with **OTIS for educators'** PD course: **zSpace Basics**



otispd.com/events/view/13956

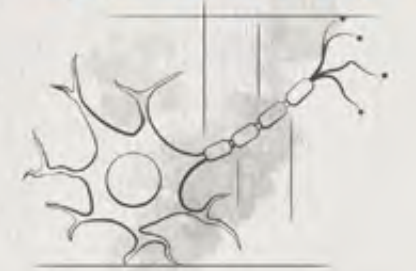
GRADE BAND RECOMMENDATION: Grades K – 12

www.teq.com/stem/zspace



LESSON PLAN

DON'T BE NERVOUS



- 1 Using Human Anatomy Atlas by Visible Body on the zSpace, have students utilize the 3D model to learn the basics of cranial nerves, including their names, locations, and each of their functions.
- 2 Have students partner up and choose one nerve function to test on each other. This can be the olfactory nerve, optic nerve, trigeminal nerve, and more.
- 3 Have each student team devise a way to test the specific nerve function they've chosen to explore. They can create an eye chart, run a smell test, and more. Then, let them run the test on each other!
- 4 After running their test, have students log their data, share their experiment design, and explain their findings to the class.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



KUBO

What is it?

KUBO is a screen-free coding robot that offers young students a fun and engaging way to learn coding skills! It aims to teach coding using a unique puzzle-like concept called TagTile. Learning functions, subroutines, and loops becomes as easy as putting together a puzzle.

Tell me more!

KUBO provides hands-on and digital learning options that help young learners build computational thinking skills. With options for blended learning, standards-based lesson plans, and cross-curricular challenges, KUBO is the perfect K-5 learning solution. Even the most technology-shy student will find coding easy and fun with KUBO. By emphasizing blended and intuitive learning, KUBO encourages a whole new generation of students to develop essential 21st century skills.

GRADE BAND RECOMMENDATION: Grades K –5
www.teq.com/browse/stem-technologies/kubo



Possibilities:
Combine **STEM and language arts** with a lesson that will challenge students' coding and communication skills at the same time.

LESSON PLAN

THE SECRET ROUTE

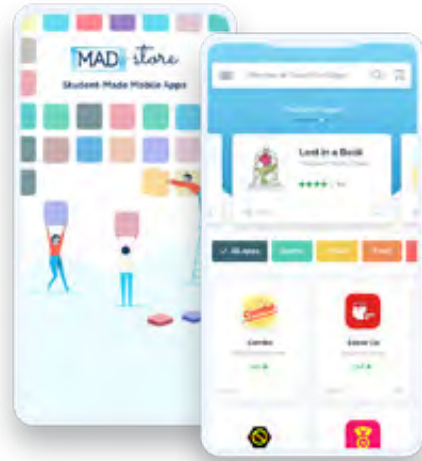


- 1 Have students work with a partner. Each student will create a secret map route for the KUBO.
- 2 Sitting back-to-back, one student will describe their map route verbally, the other student will create the route using TagTiles. Students will review the two versions of the route to see if they are the same.
- 3 Students will then switch so that each gets a turn to describe their secret route and create a route based on the communication from their partner.
- 4 Extensions can include secret routes that are communicated through body language only, or a competition in which one student describes the route and multiple other students attempt to complete it the quickest.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



What is it?

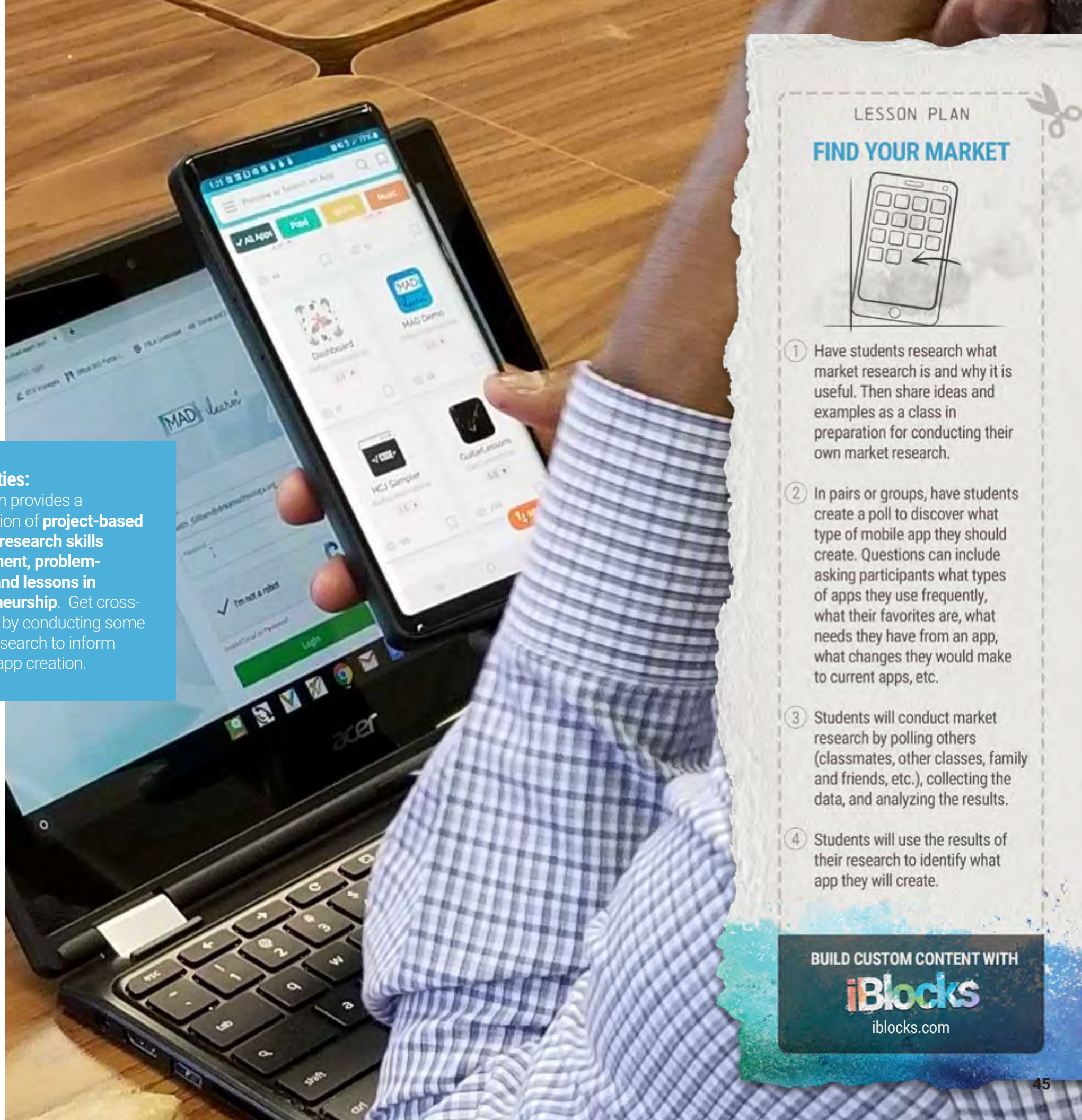
MAD-learn is an innovative mobile app development program that teaches students to develop their own mobile application while encouraging entrepreneurship and building future-ready skills for the leaders of tomorrow.

Tell me more!

MAD-learn engages students in the design thinking process as students brainstorm app ideas and decide which ones they're most passionate about building. Then, they'll plan, design, and build their brand by creating their own logo and more! When they're finished, students will get feedback from peers, test, and then launch their app for the class.

GRADE BAND RECOMMENDATION: Grades 3-12

www.teq.com/browse/mad-learn



Possibilities: MAD-learn provides a combination of **project-based learning, research skills development, problem-solving, and lessons in entrepreneurship.** Get cross-curricular by conducting some market research to inform eventual app creation.

LESSON PLAN

FIND YOUR MARKET



- ① Have students research what market research is and why it is useful. Then share ideas and examples as a class in preparation for conducting their own market research.
- ② In pairs or groups, have students create a poll to discover what type of mobile app they should create. Questions can include asking participants what types of apps they use frequently, what their favorites are, what needs they have from an app, what changes they would make to current apps, etc.
- ③ Students will conduct market research by polling others (classmates, other classes, family and friends, etc.), collecting the data, and analyzing the results.
- ④ Students will use the results of their research to identify what app they will create.

BUILD CUSTOM CONTENT WITH



iblocks.com



What is it?

Makey Makey is an invention kit that tricks your computer into thinking that almost anything is a keyboard. This allows you to hook up all kinds of fun things as an input. This means in no time your students will be creating game controllers, inventing musical instruments, and making voting machines and light-up paper circuits.

Tell me more!

Makey Makey uses high resistance switching to detect when you've made a connection even through materials that aren't very conductive (like leaves, pasta, or people). The Makey Makey can also act like a keyboard or mouse, allowing students to get inventive with their creations. It's a great way to teach circuitry, and is an easy tool to integrate with other subjects, topics, and STEM solutions.



GRADE BAND RECOMMENDATION: Grades 3-12

www.teq.com/stem/sparkfun



Possibilities:

Did you know you can use your Makey Makey to **teach earth science, space systems, and visual arts**? Check out our lesson plan to learn about a great cross-curricular way to integrate Makey Makey in the classroom.



Explore integrating this product into instruction with **OTIS for educators'** PD course: **Makey Makey Circuits**



otispd.com/events/view/14222



LESSON PLAN

CREATE A GAMEPAD



- 1 Review the basics of circuits and block-based coding with students (prerequisite knowledge). Discuss video and computer games. Introduce the idea that student will be creating a controller and coding abilities for a game.
- 2 Students will create a gamepad using salt dough (or other conductive material) and their Makey Makey. Teachers can identify specific functions or buttons that will need to be used.
- 3 Using any free game on Scratch (perhaps a game students have previously created), students will test their Makey Makey gamepad and make any needed adjustments and improvements.
- 4 Extensions include coding a "special move" in the game that connects to a button, having other students test the gamepad, running a class "arcade" event, etc.

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



What is it?

The Mayku vacuum formers are mold and model creation devices. They provide tangible learning experiences, allowing students to collaborate, build self-confidence, and learn innovation and entrepreneurial skills. Makyu molds are food safe and compatible with most pourable materials, from soap and wax, to plaster and jesmonite.

Tell me more!

The FormBox can create replicas from objects in seconds, increasing student engagement with STEM as they're able to experience tangible results right away. With the Makyu Multiplier, students can create ultra-precise molds, prototypes, and can cast complex objects at a fraction of the cost, with four times the pressure of injection molding. Utilize the ready-made Mayku Teach platform to access resources and over 60 lesson plans.

GRADE BAND RECOMMENDATION: Grades 5-8

www.teq.com/stem-technologies/makyu

Possibilities:

There's no end to what you can do with a Makyu vacuum former, but one of our favorite projects is to have students **create aerodynamic car models!**



LESSON PLAN

DESIGN AND MAKE A LIGHTWEIGHT CAR BODY



- 1 Have students research aerodynamics and airfoils, paying close attention to the concepts of drag, thrust, and lift. This can include videos, different objects affected by aerodynamics (cars, aircraft, buildings, etc.)
- 2 Allow students time to brainstorm and sketch a design of an aerodynamic car body based on their research.
- 3 Use the Makyu to help students bring their blueprints to life by creating a mold and then casting the car body.
- 4 Extensions include: completing the car design with wheels/motor, marketing, and even racing!

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com

Strawbees.®



What is it?

Strawbees are screen-free building and robotics kits with versatile connectors and building straws, allowing students to have fun creating inventions and exploring rapid prototyping. Strawbees flexible building kits help students develop complex problem-solving, critical thinking, and creative engineering skills.

Tell me more!

The complete STEAM building solution for hands-on and collaborative learning in your classroom, Strawbees kits include flexible building materials; micro:bit boards to allow students to build and code; and access to Strawbees Classroom, which offers curriculum-aligned, class-ready lessons and resources.

GRADE BAND RECOMMENDATION: Grades 3-8

www.teq.com/stem-technologies/strawbees

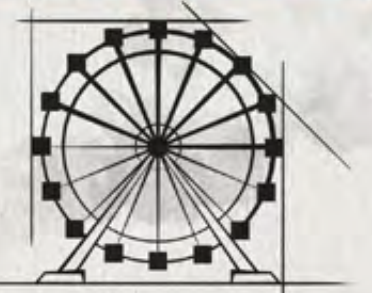


Possibilities:

There's no end to what you can do with Strawbees building kits, but one of our favorite projects is to have **students create their own amusement park rides!**

LESSON PLAN

DESIGN AN AMUSEMENT PARK RIDE



- 1 Have students research amusement parks and rides, paying close attention to historical developments, feats of engineering, and ride designs.
- 2 Allow students time to brainstorm and sketch a design of an amusement park ride based on their research.
- 3 Use Strawbees to help students bring their blueprints to life by building their rides.
- 4 Extensions include: motorizing their ride with micro:bit, combining different rides into a theme park, and more!

BUILD CUSTOM CONTENT WITH

iBlocks

iblocks.com



What is it?

The Muse series from Full Spectrum Laser are the ideal choice for the classroom, whether you are making original art or inspiring future innovators. Perfect for STEAM programs, Muse series laser cutters can easily handle a wide variety of materials including wood, glass, acrylic, and more.

Tell me more!

The Muse Core and Muse 3D systems include exclusive features that enhance productivity for both beginner and expert makers alike, and they're easy to set up. These machines present students with opportunities to develop skill sets for the future. Students can explore various STEAM applications for laser cutting, including projects related to biotechnology, computer hardware, industrial engineering, and more. Becoming familiar with these high-tech machines and their components will give students the confidence they need to innovate, create, and succeed – both in the classroom and beyond.

GRADE BAND RECOMMENDATION: 3 – 12

www.teq.com/stem/fslaser



Possibilities:
There's no end to what you can do with a Muse laser cutter, but one of our favorite projects is to have students create a model of a tiny house!



BLOXELS

What is it?

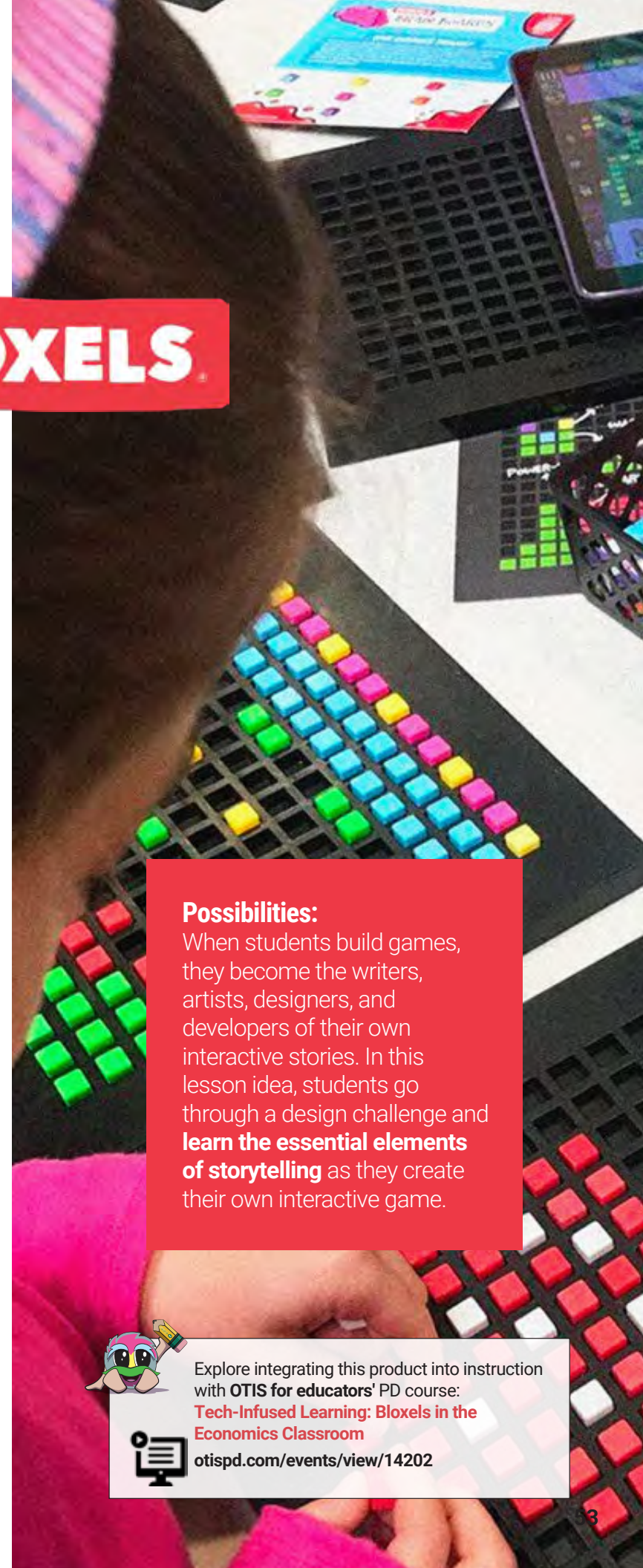
Bloxels is an intuitive platform where students create 13-bit layouts, characters, and art for their very own interactive video game. All it takes is a Bloxels gameboard, blocks, a device, and, of course, imagination. Educators can easily integrate Bloxels into their traditional curriculum – history, geography, math, science, and language arts – all through the power of interactive storytelling.

Tell me more!

Students start with their story idea, and create their game using the Bloxels gameboard. Then, with the Bloxels EDU app, students turn their physical creations into a digital game. In the app, they can edit and customize everything – from what it looks like to how the different elements interact and behave. Bloxels EDU encourages collaboration and creativity while guiding students through a design thinking process.

GRADE BAND RECOMMENDATION: K – 12

www.teq.com/stem/bloxels



Possibilities:
When students build games, they become the writers, artists, designers, and developers of their own interactive stories. In this lesson idea, students go through a design challenge and learn the essential elements of storytelling as they create their own interactive game.



Explore integrating this product into instruction with OTIS for educators' PD course:
Tech-Infused Learning: Bloxels in the Economics Classroom
otispd.com/events/view/14202

PIPER



What is it?

Piper is a hands-on STEAM learning experience that allows students to learn computer science, electronics, and coding concepts while building and using a fully functioning computer.

Tell me more!

The possibilities of exploring computer science concepts are endless. Along with students building their own fully functional computer, they will explore STEAM through Piper's StoryMode using the Raspberry Pi Edition of Minecraft, and PiperCode using Blockly (Google's block-based visual programming language). In addition, they will have an extended understanding of design thinking through creative games, projects, hackathons, and design challenges.

GRADE BAND RECOMMENDATION: 3 – 9

www.teq.com/stem/piper



Possibilities:

Use Piper in our Coding and Classifying: Ready, Set, Sort! iBlock. An iBlock is a project-based learning (PBL) solution built to foster critical thinking and hands-on STEAM learning.



Explore integrating this product into instruction with **OTIS for educators'** PD course: **Intro to Programming Education**



otispd.com/events/view/14141

Kai's <clan>



What is it?

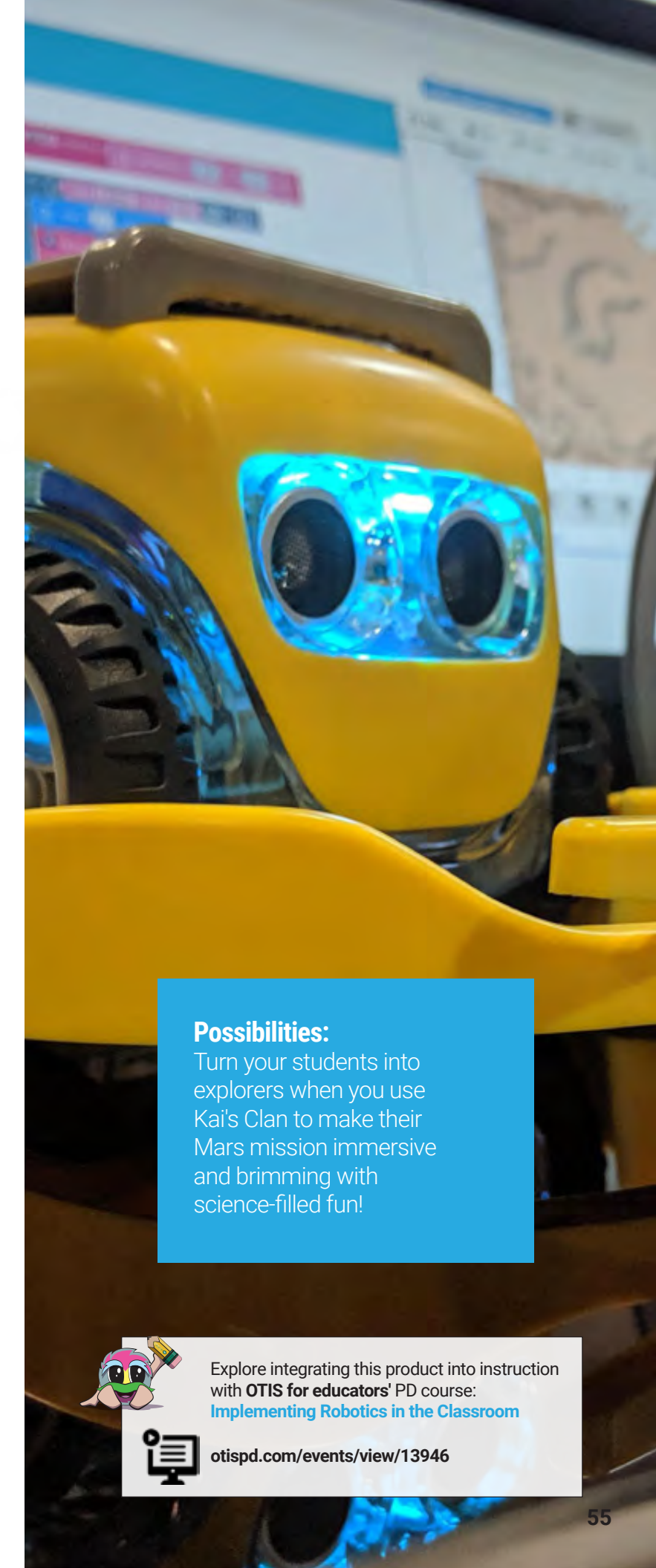
Kai's Clan is a collaborative coding platform that unites robotics, AR, VR, and more into an all-in-one learning platform.

Tell me more!

Kai's Clan is cloud-based collaborative programming and robotics environment where students around the country, or even at partner schools on the other side of the world, can work together. With a wide variety of comprehensive lesson plans, students are tasked with solving micro-versions of real-world problems. This allows students to collaborate, relate, and have a better grasp on issues that are happening around us.

GRADE BAND RECOMMENDATION: 3 – 8

www.teq.com/stem/kais-clan



Possibilities:

Turn your students into explorers when you use Kai's Clan to make their Mars mission immersive and brimming with science-filled fun!



Explore integrating this product into instruction with **OTIS for educators'** PD course: **Implementing Robotics in the Classroom**



otispd.com/events/view/13946

MATTER and FORM

3D SCANNER V2



What is it?

Matter and Form's 3D scanner is an eye-safe laser scanner with patented technology for capturing a more diverse set of materials than other 3D laser scanners.

Tell me more!

The Matter and Form 3D scanner uses a high-definition camera to capture 3D objects at a high resolution and convert them to a digital file. 3D scanning is a great tool to add to your STEM or 3D print lab. It brings together art, science, and technology for your students, and engages them in the engineering design process.

GRADE BAND RECOMMENDATION: K – 12

www.teq.com/stem/matter-and-form



Possibilities:

Explore **reverse engineering** with Matter and Form's 3D Scanner! Students can learn about forces and interactions, the engineering design process, 3D modeling, and more.



What is it?

The micro:bit is a tiny programmable computer designed to make learning coding and computer science simple and engaging. The micro:bit has all the features your students need to code awesome things in the classroom.

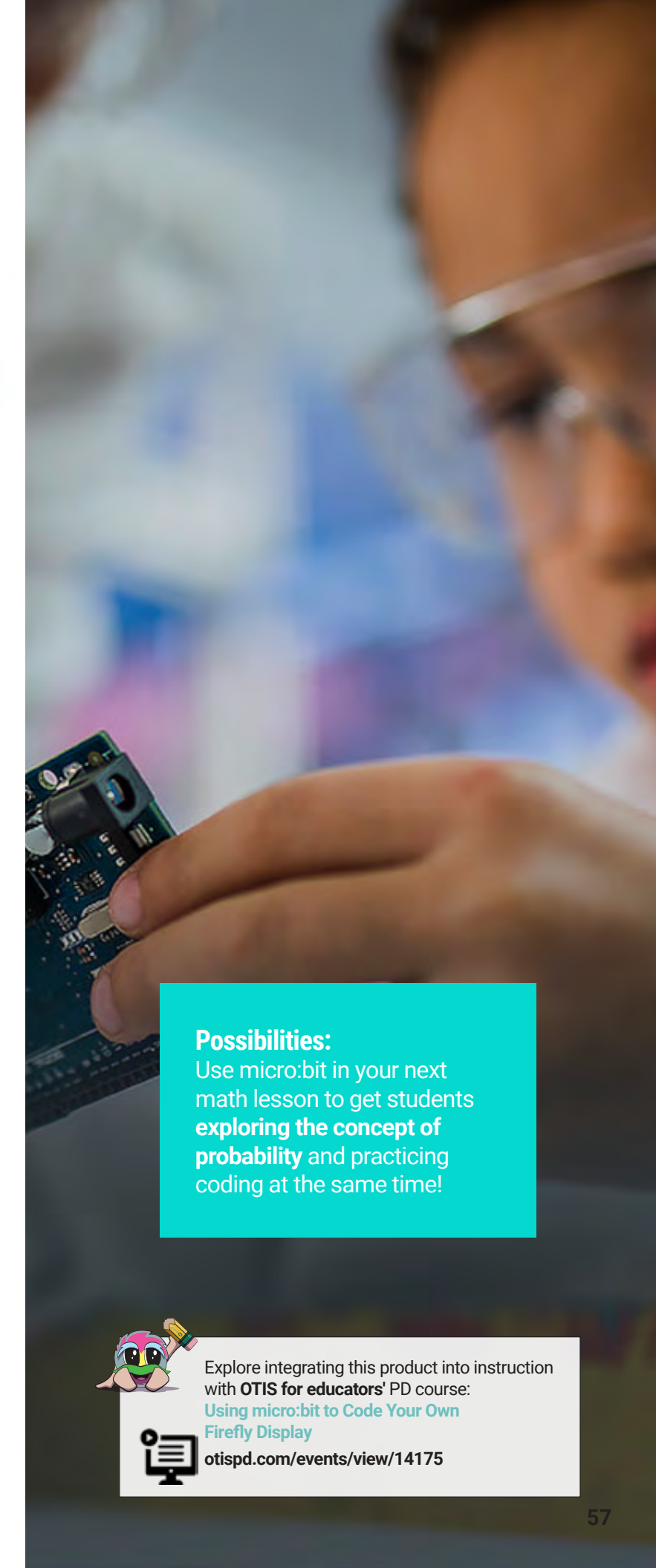
Tell me more!

micro:bit enables students to get creative with digital technology. Using micro:bit, students can program a variety of different LEDs, sensors, and buttons using the free Makecode editor provided by Microsoft. It can be coded from any web browser in Blocks, Javascript, Python, Scratch, and more, and there's no software required.



GRADE BAND RECOMMENDATION: K – 12

www.teq.com/stem/sparkfun



Possibilities:

Use micro:bit in your next math lesson to get students **exploring the concept of probability** and practicing coding at the same time!



Explore integrating this product into instruction with **OTIS for educators'** PD course:

Using micro:bit to Code Your Own Firefly Display



otispd.com/events/view/14175

MERGE®



What is it?

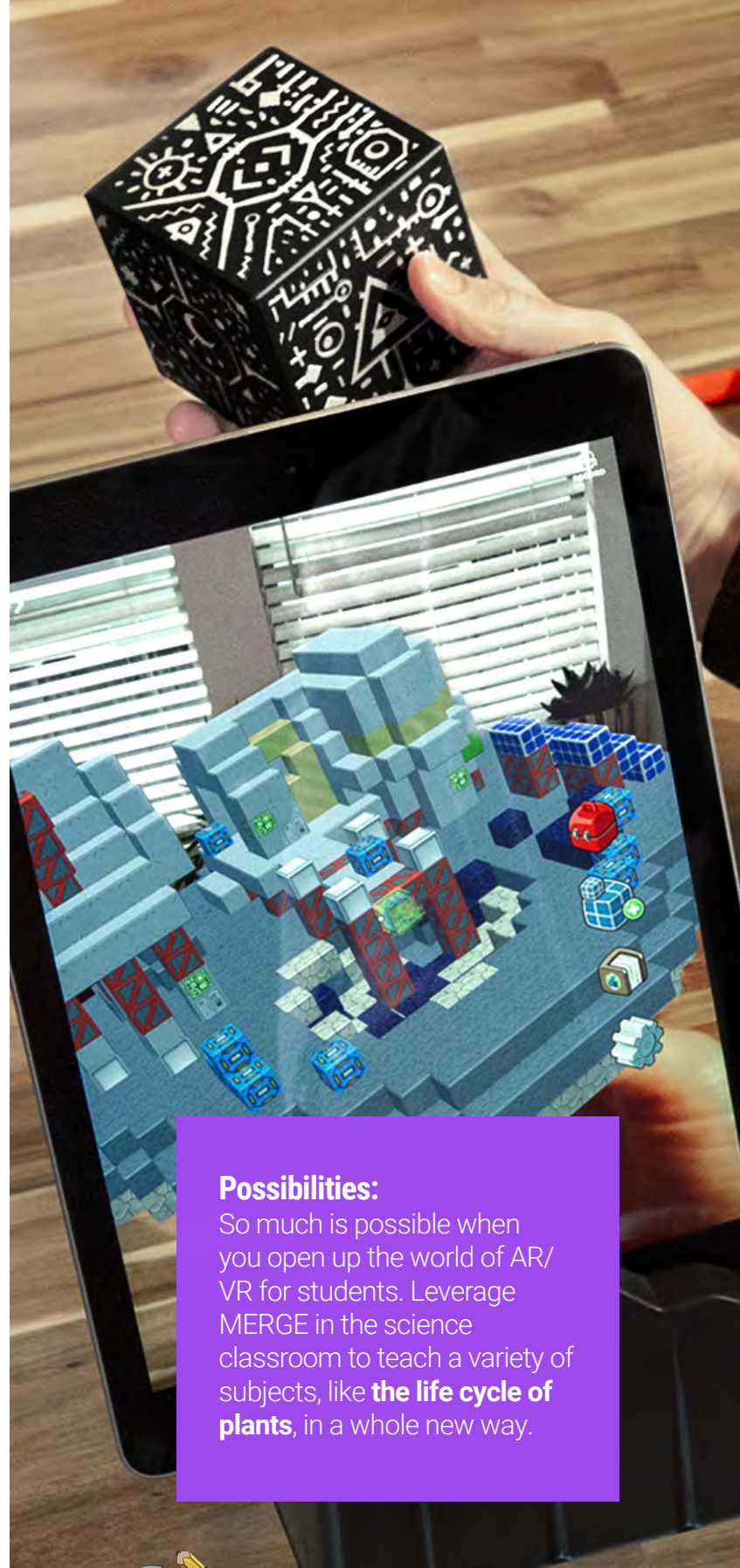
MERGE empowers active learning by providing schools with AR and VR tools that are affordable, durable, and easy to use – perfect for a classroom, lab, library, or makerspace. MERGE makes STEAM learning immersive and immediate as students hold, create, share, and place virtual objects in the real world.

Tell me more!

With the MERGE Cube and MERGE Explorer app, students can watch 360° videos, explore the world, and experience STEAM learning in a whole new way as MERGE brings lesson plans and 3D designs to life.

GRADE BAND RECOMMENDATION: K – 12

www.teq.com/stem/merge



Possibilities:

So much is possible when you open up the world of AR/VR for students. Leverage MERGE in the science classroom to teach a variety of subjects, like **the life cycle of plants**, in a whole new way.



Explore integrating this product into instruction with **OTIS for educators'** PD course: **MERGE Basics**



otispd.com/events/view/14221

STEM FUSE



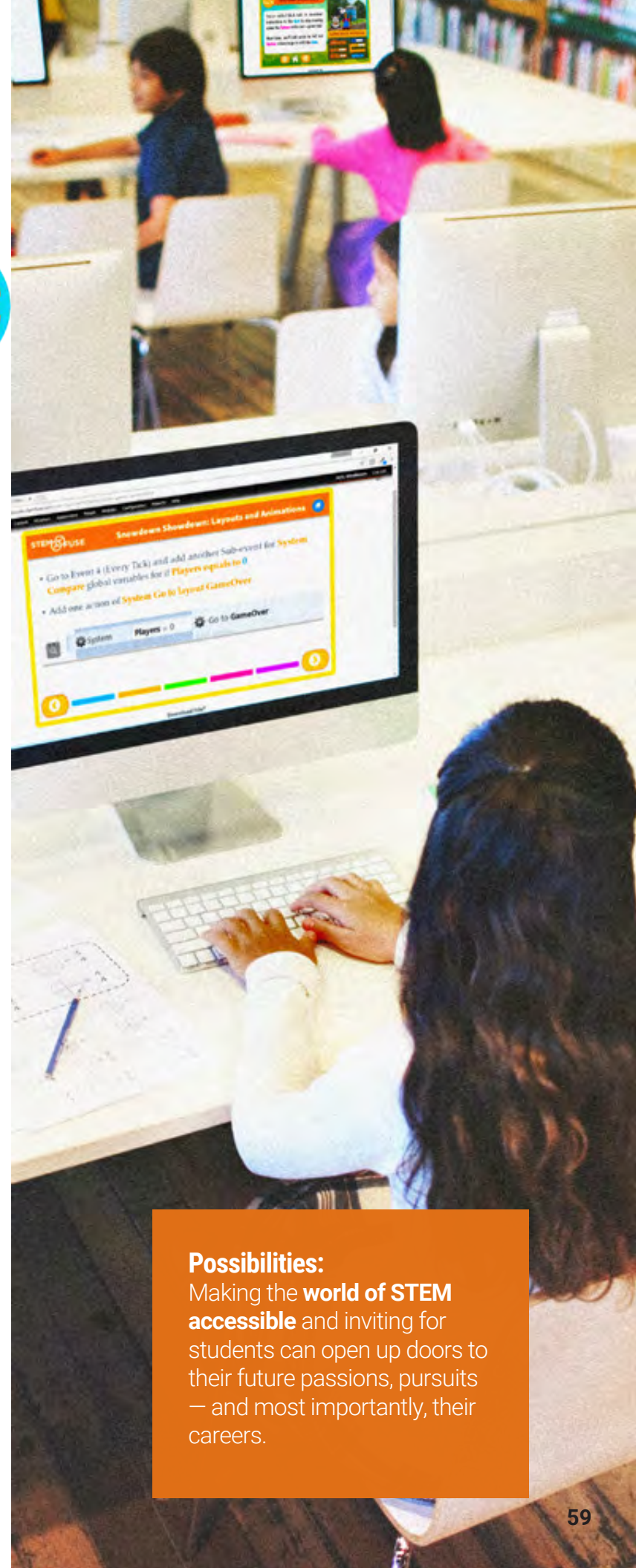
What is it?

STEM Fuse is digital STEM curriculum written by teachers, for teachers. Covering a multitude of topics, the STEM Fuse curriculum encourages students to experience activities like 3D printing, coding, gamification, and website design.

Tell me more!

STEM Fuse courses use core curriculum topics to introduce how STEM skills are needed and used in every subject. There are over 20 STEM Fuse courses available, each with their own teacher guide, step-by-step presentation, and lesson plans. This means an easy deployment of STEM into core K-12 curriculum. Additionally, STEM Fuse digital content fits any device, LMS, interactive board or panel, and can be downloaded as printable PDF files.

www.teq.com/instructional-software/stemfuse



Possibilities:

Making the **world of STEM accessible** and inviting for students can open up doors to their future passions, pursuits – and most importantly, their careers.

Project-Based Learning

NEXT

Project-based learning solutions like iBlocks can help you integrate STEM into the classroom. Through these authentic engineering design projects you can foster the hands-on learning experiences that challenge students in ways that will prepare them for the future.

iBlocks

62



What is it?

An iBlock, or “instructional block,” is a project-based learning solution built to foster critical thinking, spark creativity, and give students the opportunity to practice 21st century skills. It is designed to pull classroom technology and STEM learning together, transforming your classroom into a collaborative discovery space. Best of all it is completely customized for your students. iBlocks are created with student learning outcomes in mind and take into account specific areas of interest for your school, and the technology and resources you have available.



Student Impact

An iBlock provides a cross-curricular, holistic learning approach, so students can benefit from an environment that supports deep and lasting understanding.

Research has shown that students learn best when they're active participants in their learning, especially when it comes to STEAM subjects. An iBlock brings this idea into the classroom, since it's student-led, hands-on, and collaborative.



School Benefit

Because an iBlock is built according to your specifications, it leads to better and brighter integration of STEAM into a student's daily instruction — and life.

An iBlock matches skills to state standards, so schools have an avenue to address those standards, and encourage students to build proficiencies in those areas. If there are particular standards you'd like to highlight, we can write your iBlock to do just that.



An iBlock is project-based learning

Prepare students for the road ahead by engaging them in authentic, sustained investigation that gives them the opportunity to cultivate the skills that will last a lifetime.



An iBlock is driven by the engineering design process

Problem-solving and design thinking are central components of every iBlock. You'll see a strong focus on engineering design concepts like researching, constructing, testing, evaluating, and redesigning, since an iBlock teaches students that learning is a journey — not a straight line.



An iBlock is an enhancement to your existing curriculum

Enrich your existing curriculum with an iBlock, or use it to kick off a STEAM initiative. An iBlock is designed to supplement your instruction with content that gives students a place to invent, explore, and take ownership of their learning.

How we create an iBlock

It all begins with a collaboration call where we discuss your needs, goals, and interests. Then, with your school's focus in mind, our curriculum team will identify what pathways would work best for you, drawing on their experiences with STEM/STEAM pedagogies like 21st century skills, NGSS, the engineering design process, Understanding by Design, and backwards design for learning.

Step 1: Skills Matrix

The creation of an iBlock starts with the skills matrix, which provides structure for the entire iBlock, defining the goals and expected outcomes.

Step 2: Framework

The framework brings the skills together with relevant standards, and provides the details of each step of the Engineering Design Process in the form of iBlock modules.

Step 3: Student Workbook

The student workbook is a companion for students as they work through their iBlock. It scaffolds each module of the iBlock, and provides guidance, activities, prompts, thought-provoking questions, and more.

Step 4: Teacher's Guide

The teacher's guide assists educators as they facilitate their iBlock. It mirrors the student workbook for each iBlock module, and contains helpful guidance, tips, and prompts for teachers.

Step 5: Student Self-Assessments/Rubric

The student self-assessments/rubric are created as a way for teachers to gauge student understanding as they record and reflect on their iBlock work.

Step 6: Lesson Plans

Finally, we can create the actual lesson content in the shape of lesson plans that include a lesson description, desired outcomes, and detailed classroom activities.

Professional Development

Our implementation, facilitation, and professional development support can help ensure a successful outcome for students with your iBlock content. —

Visit www.iblocks.com for more information.

Professional Development

NEXT

Professional development is the next step of your classroom transformation. OTIS (Online Technology and Instructional Sessions) is an online PD platform where you can learn how to use new products, build your teacher toolkit, and head back to the classroom with new skills — and inspiration. You can also take advantage of onsite PD, and have a PD Specialist come to your school to learn the basics and get your new edtech rolling in the classroom.

OTIS for educators™ 66

Onsite PD 68



OTIS for educators!™

What is it?

OTIS for educators is professional development through online video sessions that are relevant and convenient. It stands for Online Technology and Instructional Sessions, but it's also the name of our new mascot. Bringing technology into the classroom is nothing short of an adventure, and we created OTIS so you could have access to the professional learning you need every step of the way. Our courses have a strong focus on educational technology and STEAM, but you'll also find lots of great sessions on topics like social-emotional learning, ENL/ELL, literacy, civics, leadership, and more.



Technology Integration

Leveraging educational technology in the classroom isn't as simple as having the latest and greatest products – it's about effectively integrating that technology in a way that engages, supports, and inspires all learners.



Project-Based Learning

Engage students with hands-on and student-led learning experiences that give them the opportunity to build and practice future-ready skills. On OTIS for educators, you'll find countless lessons, activities, and projects that you can take back to the classroom.



Teacher Development

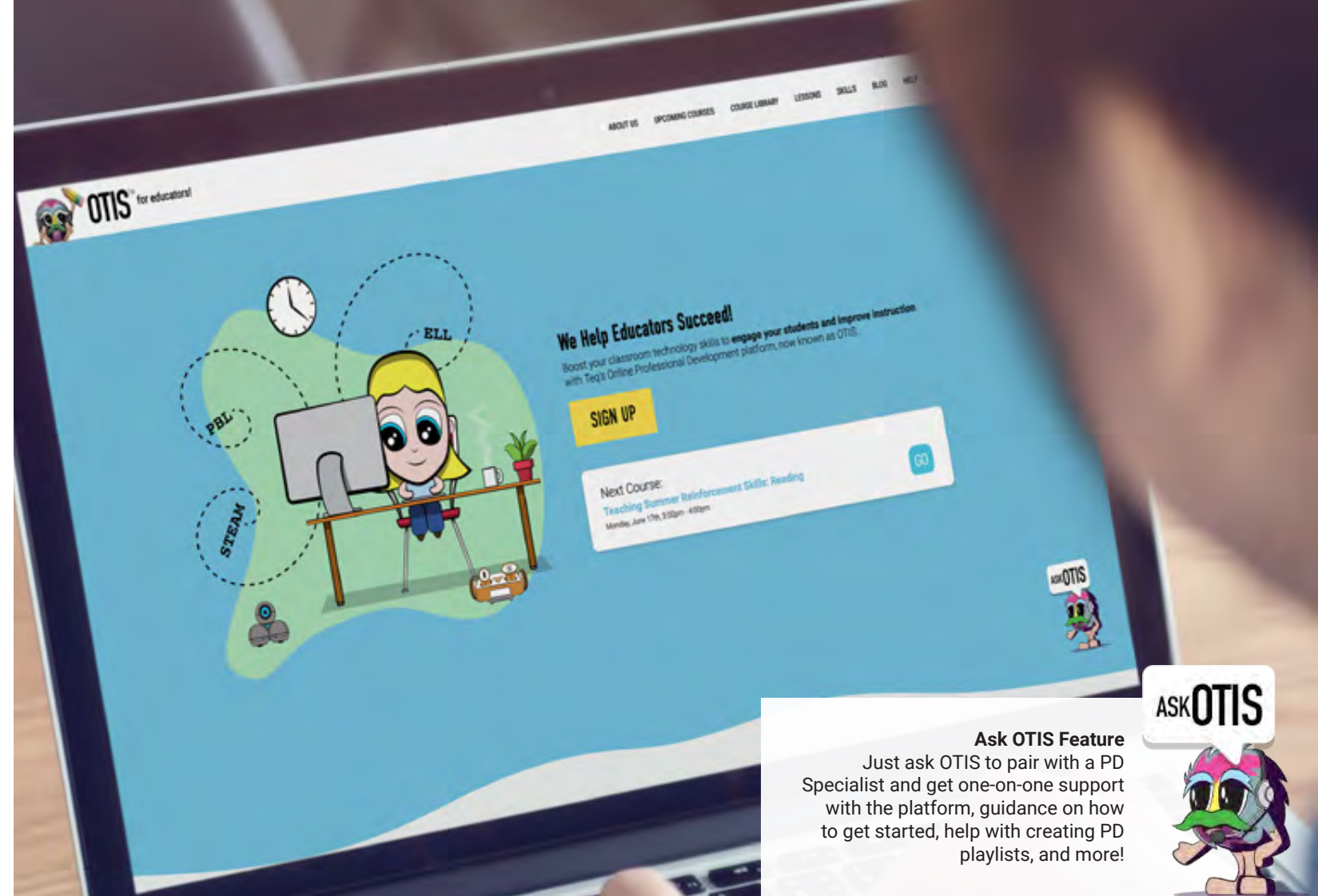
Teachers matter just as much as the students they teach. Leverage OTIS to get comfortable with new technologies, discover inspiring ways to incorporate technology into instruction, stay current with your own training, and become your most effective self.



As a state-approved PD provider, OTIS is a convenient and flexible way to fulfill your state-required PD hours.


Visit the map at www.teachingthings.com/state-approved for more details.

Visit www.OTISpd.com for more information.










ASK OTIS

Ask OTIS Feature
Just ask OTIS to pair with a PD Specialist and get one-on-one support with the platform, guidance on how to get started, help with creating PD playlists, and more!



Here are some of our favorite features:

- 
Customize Your PD
Ability to choose the category that suits you best. We offer **category-based subscriptions to specific content** covering STEM, ENL/ELL, Google, Microsoft, Apple, and SMART.
- 
Drive Technology Initiatives
Relevant and targeted PD is a crucial part of any successful technology roll-out, and our **playlists** are made to help you get you from Point A to Point B.
- 
Earn Micro-credentials
Become proficient in a specific tool or technology with **micro-credential tracks** in Google, Microsoft, Apple, SMART, and more.
- 
Build and Share Your Own Content
Able to **upload your own** PD content and use our platform as a place to host the in-house training that's essential for your school or district.
- 
Get Insightful Analytics
School and district admins have access to **advanced usage analytics**, can see and track teacher progress, recommend courses, and manage licenses.
- 
Facilitated Viewing
Bring teachers together with our **group viewing** feature and engage in PD together while still getting individual credit.
- 
LMS and LTI Integration
Use an existing learning management system to access OTIS. Import and update users and login quickly with **Google, Classlink and Clever**.



ONSITE PROFESSIONAL DEVELOPMENT

What is it?

Our PD Specialists will visit your school and provide hands-on training. You'll learn all about your new edtech products – how they work, and how they can impact student success.

Tell me more!

Purchase PD days and work with us in a mentoring/coaching capacity, or receive a bundle of days with your technology purchase. Whatever your needs, we're here to help with implementation, integration, and instructional support.

Make it virtual

All of our focused, in person PD options are also available virtually. That means our team is able to conduct all ranges of training in the way that is most appropriate for your school or district.

www.teq.com/pd-platforms/onsite-pd



The best of both worlds

If you can't decide between OTIS and onsite PD – don't worry, you don't have to! We also offer an option to blend both, so your PD package can take the shape that works best for your school or district.

Here are some of our onsite PD options:

Training

Full-day training/workshops for up to 15 participants on the topic of your choosing.

Mentoring

Work one-on-one with a PD Specialist.

Coaching

Focused, small group training around your specific goals.

Co-Teaching

Lesson delivery/facilitation with a Teq PD Specialist.

Lesson plan development

Assistance with integrating technology into lesson plans, lesson content, and unit plans.

Product demos

Hands-on demonstrations of STEM solutions and other classroom technologies.

PD planning

Collaboration on a comprehensive PD plan to support your technology initiatives.

About the team

Our PD Specialists are state-certified teachers with classroom experience and a passion to share edtech with other educators. Harness their know-how and expertise in your classroom as you get hands-on with your products, and explore how to integrate technology into instruction.

Educational Technology

NEXT

From the latest interactive displays and learning spaces that foster collaborative learning, to classroom audio systems and instructional software, technology plays an integral part in 21st century learning.

SMART	72
Lumio by SMART	74
Lü Interactive	76
Active Floor	78
Audio Enhancement	80
Storage and Carts	82

SMART®

What is it?

SMART's range of interactive flat panels (IFPs) support student-centered learning, whatever shape it takes in your classroom. Your SMART Board makes learning dynamic and collaborative with the ability to share lesson content, leverage multimedia, spark interaction, and fully engage students in the learning process.



 Certified by ENERGY STAR to save energy, lowering your total cost of ownership.

SMART IFP 6000S, MX and 7000R series

With a range of products, prices, and features, it's easy to find the IFP that's right for you. SMART Boards give your students **the best in collaboration technology** with Ultra 4K HD Resolution.



iQ Technology

Connects lesson content, interactive displays, and student devices, all in one place.



4K UHD Display

Stunning visual displays for the clearest instruction.



Object Awareness

Provides the most natural experience by automatically differentiating between finger, pen, or palm.



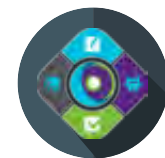
SilkTouch Technology

Unrivaled precision for writing and touch, with hours of comfortable and error-free use.



Simultaneous Touch Points

With simultaneous points of touch on both Windows and Mac, multiple students can collaborate at the board using gestures such as zoom, rotate, and flip regardless of the operating system.



SMART Learning Suite Included

Turn your lessons into enriching learning experiences. SLS combines lesson delivery, assessment, student collaboration, and game-based learning software into one ultimate education suite.

More from SMART:



SMART Podium

Project, present, and interact with your audience live. The SMART Podium helps educators communicate more effectively, improving student comprehension. While projecting to a large display, instructors can add notes or illustrations to their presentations on the touch screen.
<https://www.teq.com/sight-and-sound/smart-podium-624/>



SMART Document Camera

SMART Document Camera makes it easy to add hands-on excitement to SMART Notebook® lessons. With the camera, teachers transform images and videos of everyday objects, students' work, and all sorts of curiosities into interactive SMART Board content. It's a whole new way to bring abstract concepts to life.
<https://www.teq.com/sight-and-sound/smart-document-camera/>





Lumio™ by SMART

What is it?

Lumio lets teachers transform lessons into active, collaborative learning experiences to engage students on their devices, wherever they are.

Tell me more!

Transform static content into interactive experiences with the world's best lesson delivery, assessment, collaborative workspace, and game-based learning software suite. Lumio is a cloud-based, flexible learning platform allowing teachers to access and deliver lessons anywhere, anytime, to any student device. Lumio was built to be easy to implement in any class – perfect for direct instruction, synchronous or asynchronous learning, flipped classrooms, project-based learning, and more. Plus, teachers can use existing files, integrate with Google Drive and Classroom, or create content on the fly.



www.teq.com/product-and-service/lumio-by-smart



Lumio includes on-going support and a library of free educator-created materials including graphic organizers, content-based games, STEAM, literacy, and mental wellness/SEL.

Want professional development to support the successful adoption of the latest instructional techniques and classroom technologies.



Teq Essentials

Combine the learning power of OTIS for educators, onsite PD, and and Lumio, with Teq Essentials – an exclusive package with unparalleled learning content and instructional support.



Plus



With a **Teq Essentials Subscription**, your entire school or district receives access to OTIS Online PD and a SMART license (Notebook & Lumio).

<https://www.teq.com/pd-platforms/teq-essentials/>



Lü

INTERACTIVE PLAYGROUND

What is it?

Lü transforms traditional school environments into immersive and interactive spaces using a vast catalog of purposeful activities and world-class audiovisual equipment.

Tell me more!

Lü breaks the boundaries of your traditional physical education program — and your gym.

Lü includes a giant wall projection, a 3D camera, and a lighting and audio system. Exclusive educational apps engage students with interactive learning activities. Lü's apps are developed using a rigorous approach that integrates core components of whole child development.

Encourage each student to bloom as a whole with learning content that engages students' minds and bodies, but also gives them an avenue for social-emotional learning.



Bring your gym to the next level.

Here are the key components of every Lü configuration.



Large scale projection system
5500 lumens WXGA projector protected in a custom enclosure, rigged to the ceiling at 18 ft (5.5m).



Interactive lighting and sound
The light module comes with 6x 200w LED PAR to manage the ambient lighting and general colors, 2x Robotised LED light fixtures for special light effects and a powerful 2000 watts sound system.



3D Camera and Realtime Processing
Ball detection on the wall is possible through our 3D camera system. Just rig this camera to the ceiling and all the magic happens.



ACTIVE FLOOR

What is it?

Active Floor is an interactive solution designed to bring movement and play into learning. Research shows that physical activity and movement stimulate the neurons that store information, supporting the idea that movement supports memory and growth. Incorporating movement into a lesson helps memory, collaboration, focus, motor development, and social skills while creating an exciting and different classroom environment.

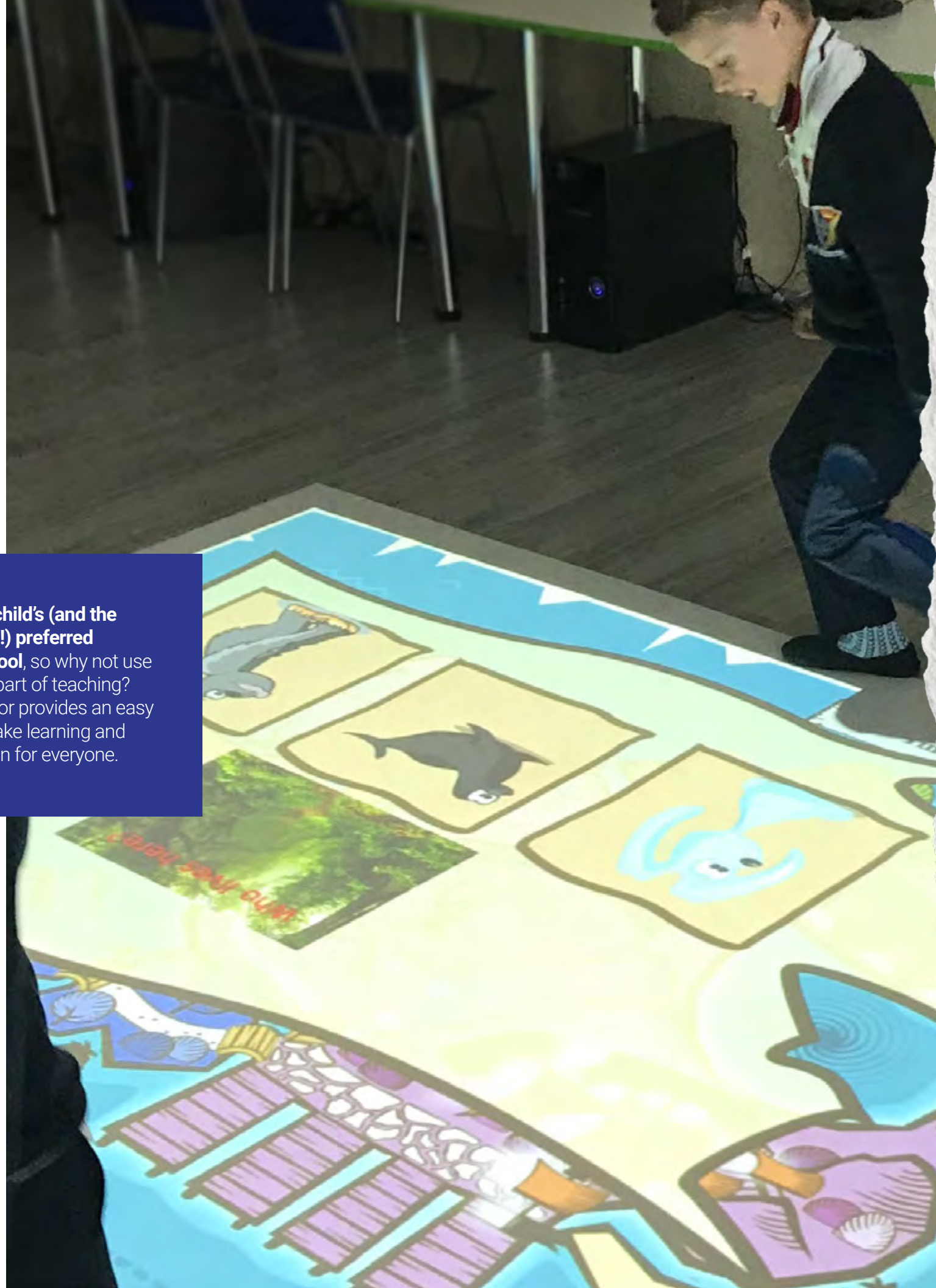
Tell me more!

Engage young students with activities that foster social learning, unlock learning potential, and deepen the pedagogical experience.

With dozens of subjects, themes, and age levels to choose from, the Active Floor software comes with a library of pre-existing learning games, as well as templates for customizable activities.

www.teq.com/sight-and-sound/activefloor

Play is a child's (and the memory's!) preferred learning tool, so why not use play as a part of teaching? Active Floor provides an easy way to make learning and moving fun for everyone.



Interactive learning through play and movement



Active Floor consists of a ceiling-mounted box with a projector, a movement tracker, and a white vinyl floor.



Active Floor takes interactive learning mobile! Now it's even easier to incorporate movement and play into classroom learning. The new Active Floor mobile unit requires no installation, comes fully assembled, and the set-up is minimal: simply plug the unit in, run a calibration, and you're ready to go.



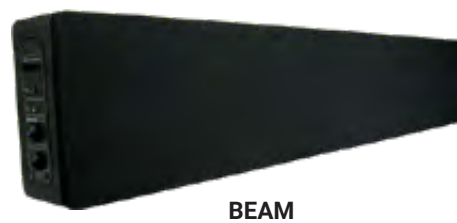
AUDIO ENHANCEMENT

What is it?

Audio Enhancement systems provide classroom sound, amplification, video, and safety solutions that enhance student and teacher interactions. Designed to work together or on their own, Teq offers Audio Enhancement speaker solutions that provide the tools for clear instruction, video solutions enhance digital content and remote learning, and schoolwide communication solutions to allow instant flexible scheduling.

Tell me more!

When students can hear better, they learn better. With multiple options and upgrade paths, Audio Enhancement systems can best fit any classroom. Teachers can reach any student from anywhere with crisp, clear audio integrations, portable speaker solutions, and live and pre-recorded video streaming capabilities.



BEAM

www.teq.com/sight-and-sound/audio-enhancement



When students struggle to hear the lesson, they often miss key principles for understanding. **Audio solutions** distribute the teacher's voice evenly throughout the classroom so all students hear at the same sound decibel, no matter where they are sitting.



Amplify Teacher Voice

Teachers can now speak in their natural voice, resulting in reduced fatigue, stress, and absences.



Evenly and Clearly Distribute Sound

Whether you're in the front or the back of the room, all students hear clearly.



Maximize Academic Success

Studies have shown a 10% gain in achievement test scores and on-task behavior in just the first year of using Audio Enhancement systems.



Storage and Carts

Tech Tub²



Tech Tub² family

The Tech Tub² collection of storage and charging systems is designed to protect your classroom devices, and easily move them wherever learning takes place. With a variety of trolleys, carts, and easels available to stack and store your tubs, moving classroom devices has never been safer or simpler.

www.teq.com/sight-and-sound/tech-tub

3D Printer Cart

When schools increase their 3D printing usage, the need to properly store printer tools and materials also increases. With the Copernicus 3D Printer Cart, printing equipment can be stored in one convenient location and easily moved from space to space. Ideal for libraries and classrooms with limited space.

www.teq.com/stem/ultimaker-3d-printer/3d-printer-cart



iRover²

Perfect for elementary and middle school classrooms, the iRover²'s sturdy design, ergonomic handles, and electric-lift function allows all students, including those with special needs, to interact with classroom panels.

www.teq.com/sight-and-sound/irover2



Conen Mounts

Conen motorized mounts ensure classroom displays are always where they need to be. Whether wall mounted, free standing, or mobile, Conen's mounting solutions offer smooth adjustability and maximum flexibility to any interactive flat panel.

[/www.teq.com/sight-and-sound/wall-mounts-mobile-stands](http://www.teq.com/sight-and-sound/wall-mounts-mobile-stands)

Active Learning Spaces

NEXT

Find the right solutions for your physical space, be it a classroom, active learning space, STEM Lab, or makerspace. As you're implementing new technologies into the design of classrooms, don't let furniture stay in the past. Configurable desks and soft seating easily rearrange to fit your classroom environment.

Furniture

86

Furniture

Supporting an Active Learning Environment

How a classroom space is designed can have a significant effect on the type of learning that takes place there, because different kinds of learning activities are best supported by different arrangements of the physical space.

Configurable Classrooms

Options for classrooms, makerspaces, libraries, commons, lounges, STEM Labs, and more. Create collaborative spaces, areas for direct instruction, or space for individual work. The best classroom designs are the ones that are most flexible and can be arranged, and then rearranged, to support any type of learning.

Modular, Mobile and Adjustable

Agile and flexible desks, tables, storage, and seating connect students and teachers to lessons, to each other, and to new ways of learning. In addition, soft seating options are also available in freestanding or modular configurations.



Contact us today to learn more about our furniture options:
1-877-455-9369

www.teq.com/makerspaces/furniture



MOORECO™



Norva Nivel.



Modular Furniture

Grade Band and Compatibility Chart

Curriculum versatility indicates products with a higher versatility, meaning they can be used in multiple subject areas or grade levels compared to products that are more subject and/or grade specific. **Ease of use** ranks the complexity level for teachers as they implement the product into their instruction.

A **solid circle** indicates the grade band for which the product is most appropriate, while **outlined circle** indicates other grade bands where it can also be successfully applied.

	K-2	3-5	6-8	9-12	Curriculum Versatility	Ease of use
KIBO	●				Subject/Grade Specific	Easy
Sphero indi	●					
Robotis Play	●	○			Subject/Grade Specific	Easy
Osmo	●	●			Medium	Easy
Bloxels	○	●	●	○	Medium	Intermediate
Ozobot	●	●	○		Medium	Easy
Cubelets	●	●	○		Subject/Grade Specific	Intermediate
Dash and Dot	●	●			Medium	Subject/Grade Specific
Squishy Circuits	●	●				
SparkFun Beginner	●	●			Subject/Grade specific	Easy
Robotis Dream		●	○	○	Subject/Grade Specific	Easy
Hummingbird Robotics Kits		●	●			
3Doodler	○	●	●			
MAD-learn	○	●	●	○		
Sphero littleBits	○	●	●	○	High	Easy
Sphero SPRK+, BOLT, Mini	○	●	●	●	Medium	Intermediate
Merge	○	●	●	●	Medium	Intermediate
SAM Labs	○	●	●	●	Medium	Easy
zSpace	●	●	●	●	High	Intermediate
Farmshelf	●	●	●	●		
Piper		●	●			
Kai's Clan		●	●	○		
Raspberry Pi		○	●	●	Subject/Grade Specific	Intermediate
Sphero RVR		○	●	●		
pi-top		○	●	●	Medium	Advanced
UBTECH UKits			●	●		
Veative			●	●		
Robotis Bioloid (STEM)			●	●	Medium	Advanced
Cue			●		Medium	Easy
SparkFun Intermediate			●		High	Intermediate
Robotis Mini			○	●	Medium	Advanced
Robotis Engineering Kit				●		
SparkFun Advanced				●	Medium	Advanced

The compatibility chart below illustrates which devices are compatible with each product, and indicates the product's programming type. Depending on a product's specific application, its programming type can be further categorized as:

Device Free Programming (Grades K-2)

Programming concepts do not just have to be taught by using an app or a smart device, they can also be taught by utilizing physical objects to help students learn and understand basic programming concepts.

Block-Based Programming (Grades 3-7)

Involves dragging and dropping instruction blocks together to form a program. These blocks represent different text lines of code and make it easier for students to learn and understand basic programming concepts. Scratch and Blockly are popular block-based programming editors.

Text Based Programming (Grades 7-12)

Text-based programming involves writing outlines of code in text form. These type of programming languages should only be taught after developing an understanding of basic programming concepts through device free and block-based programming.

Manufacturer	Product	Windows	Google (Chromebook)	Android	Amazon Fire Devices	MAC OS	Apple iOS	Mobile Device	Coding Language
Globisens	LabDisc	●	●	●		●	●	●	
Kai's <i>clan</i>	Kai's Cloud			●			●	●	Blockly/Drag & Drop
	Kai's Eye			●			●	●	Blockly/Drag & Drop
Modular Robotics	Cubletes	●	●	●	●	●	●	●	
	GoPiGo Raspberry Pi Robot	●	●	●	●	●	●	●	
	BrickPi								
MAD-learn	Giggle Bot	●	●	●	●	●	●	●	
	MAD-learn	●	●	●	●	●	●	●	No coding required
MERGE	MERGE Cube	●	●	●			●	●	
	VR/AR Goggles		●	●			●	●	
Ozobot	Ozoblocky	●	●	●	●	●	●	●	Color Coding and Blockly
	Ozobot Evo App	●	N/A	●		●	●	●	Color Coding and Blockly
HUMMINGBIRD	Hummingbird Robotics Kit & Finch Robot	●	●	●		●	●	●	Blockly, Python, & JavaScript
pi top	Pi-Top								Python
Pixel Press	Bloxels		●	●	●		●	●	
ROBOTIS	PLAY	●	Coming Soon	●		●	●	●	Scratch, Blockly
	DREAM	●	Coming Soon	●		●	●	●	C/C++, Blockly
	STEM	●	Coming Soon	●		●	●	●	C/C++, Blockly
	Engineer	●	Coming Soon	●		●	●	●	Python
	Mini	●	Coming Soon	●		●	●	●	C/C++, Blockly
SAM LABS	SAM Studio	●	●	●		●	●		Drag and Drop, Blockly
sparkfun. ELECTRONICS	SparkFun: Beginner	●	●	●		●	●	●	Ardublock
	SparkFun: Intermediate	●	●	●		●	●	●	Ardublock
	SparkFun: Advanced	●	●	●		●	●	●	JavaScript
sphero	Sphero Edu (SPRK+, BOLT, Mini, RVR)	●	●	●	●	●	●	●	Draw, Blockly/Drag & Drop, JavaScript
	Sphero Edu Jr. (indi only)		● (Android app-supported)	●	●		●		Drag and Drop
littleBits by sphero	Code Kit App	●	●			●			Drag and Drop, Blockly, JavaScript (VIEW only)
	FUSE App	●	●	●	●	●	●	●	Circuit Building, Drag and Drop, Blockly
STEM FUSE	STEM:IT Elementary	●	●	●		●	●	●	Scratch
	STEM:IT MS/HS	●	●	●		●	●	●	N/A
	Game:IT Elementary	●	●	●		●	●	●	Scratch
	Game:IT Junior	●	●	●		●	●	●	Construct 2 or 3
	Game:IT Intermediate	●	●	●		●	●	●	Construct 2 or 3
	Game:IT	●	●	●		●	●	●	Construct 2 or 3
	STEM Fuse: Web Design	●	●	●		●	●	●	JavaScript, HTML5 & CSS
	Game:IT Advanced	●	●	●		●	●	●	C#
	Mobile App:IT	●	●	●		●	●	●	Java
	Osmo	Words				●		●	●
Tanagram					●		●	●	
Numbers					●		●	●	
Coding Awbie					●		●	●	
Coding Jam					●		●	●	
Coding Duo					●		●	●	
Monster					●		●	●	
Pizza Co					●		●	●	
Newton					●		●	●	
Masterpiece				●		●	●		
UBTECH EDUCATION	JIMU Robot	●	●	●	N/A		●	●	
	UKITs	●	●	●	N/A		●	●	
v. wonder workshop	Dash and Dot	●	●	●	●	●	●	●	Blockly
	Cue	●	●	●	●	●	●	●	Blockly & JavaScript

Teq™ Product

STEM Alignment

Amplify Science

Amplify Science was designed to give students engaging, realistic experiences that mirror how scientists and engineers actually work. To do this, the Lawrence Hall of Science and Amplify created compelling print and digital resources that work seamlessly together to enable students' investigations and explorations. Amplify Science blends hands-on investigations, literacy-rich activities, and interactive digital tools to empower students to think, read, write, and argue like real scientists and engineers. To support your STEM initiatives, Teq has aligned our K-12 STEM bundles and products to the units in Amplify Science. Learn more about Amplify Science at <https://www.amplify.com/programs/amplify-science/>



Inspire Science is designed to help spark students' curiosity and empower them to ask more questions, think more critically, and generate innovative ideas. Students bring solutions to everyday challenges through inquiry-based, hands-on investigations of real-world phenomena. Inspire Science is built with the proven 5E instructional framework that provides an in-depth, collaborative, evidence-based, and project-based learning experience to help you put your K-12 Science students on the path to career and college readiness. To support your STEM initiatives, Teq has aligned our K-12 STEM bundles and products to the modules and units in Inspire Science. Learn more about McGraw Hill Education's Inspire Science at <https://www.mheducation.com/prek-12/program/microsites/MKTSP-AIB05M0.html>



Today's students must be prepared to thrive in a constantly evolving technological landscape. The ISTE Standards for Students are designed to empower student voice and ensure that learning is a student-driven process. The STEM products found in this catalog encourage student-led, project-based learning. They can be used as part of your adoption of the ISTE Standards. Learn more about the ISTE Standards for Students at <https://www.iste.org/standards/for-students>



The codable robots featured in this catalog support the CSTA K-12 Computer Science Standards. The CSTA K-12 Computer Science Standards delineate a core set of learning objectives designed to provide the foundation for a complete computer science curriculum and its implementation at the K-12 level. Learn more at <https://www.csteachers.org/page/standards>



The codable robots featured in this catalog, including the Dash from Wonder Workshop, Sphero robots, and Ozobots support Code.org's Computer Science (CS) Fundamentals series, making it easy for teachers and students to get started coding. The Wonder Workshop Learn to Code Curriculum is organized into six coding levels, "A" through "F," with each level covering two or three of the six fundamental coding concepts (sequences, loops, events, conditionals, functions, and variables). You can learn more about Code.org's CS Fundamentals at <https://code.org/educate/curriculum/elementary-school>



Teq is a member of the national CSforALL initiative, the hub of the national K-12 computer science community. The goal of CSforALL is to expand, connect and amplify the collective voice of the CSforALL movement. Learn more at <https://www.csforall.org/>



Computer Science for All is part of Mayor de Blasio and Chancellor Carranza's Equity and Excellence for All initiatives. Together, the Equity and Excellence for All initiatives are building a pathway to success in college and careers for all NYC students. Computer Science for All brings 21st-century computer science instruction to every school. Learn more about CS4All in NYC at <http://cs4all.nyc/>

By offering products like Micro:bit, Teq supports the goals of CS4All by providing products that can help students complete meaningful units of CS when combined with CS4All curriculum. Learn more at <https://blueprint.cs4all.nyc/curriculum/intro-to-pcomp/>



The products and bundles included in Teq's STEM catalog support the implementation of the Next Generation Science Standards. Learn more at <https://www.nextgenscience.org/>



Teq™

7 Norden Lane, Huntington Station, NY, 11746
www.teq.com | 877.455.9369