

**GREATNESS
STEMS
FROM IOWANS**

GOVERNOR'S STEM ADVISORY COUNCIL

dedicated to building a strong STEM education foundation for all Iowans

2020-2021

Iowa STEM

Scale-Up

Programs

Pint Size Science



- ▶ **GRADE LEVELS:** PreK-2
- ▶ **LOCATION:** In school and out of school
- ▶ **DESCRIPTION:** Engage and inspire young minds to explore scientific phenomena. This course is designed to build science understanding and respond to the ever changing interests and abilities of children.
- ▶ **WEBSITE:** <https://www.sciowa.org/scaleup>

STEM in Action

- ▶ **GRADE LEVELS:** PreK-5
- ▶ **LOCATION:** In school and out of school
- ▶ **DESCRIPTION:** Incorporate three-dimensional learning with an emphasis on engineering and authentic hands-on, problem-based learning. This course follows the Engineering Design Process of defining the problem, planning solutions, making a prototype, reflecting, communicating results and redesigning.
- ▶ **WEBSITE:** <http://www.hand2mind.com/brands/stem-in-action>



Computer Science Fundamentals

- ▶ **GRADE LEVELS:** K-5
- ▶ **LOCATION:** In school and out of school
- ▶ **DESCRIPTION:** Foster equity and diversity in the classroom, breaking down barriers and stereotypes around computer science. This course is designed to be flexible for the classroom.
- ▶ **WEBSITE:** <https://newbo.co/code-org-partnership/>



Differentiated Math Centers

- ▶ **GRADE LEVELS:** K-5
- ▶ **LOCATION:** In school and out of school
- ▶ **DESCRIPTION:** An easy-to-manage resource that provides 3 levels of instruction tied to the same Standard of Learning. Each game or activity is standards-aligned, hands-on and complete with formative assessment writing prompt and skills practice.
- ▶ **WEBSITE:**
<https://www.hand2mind.com/Brands/Differentiated-Math-Centers>

VEX IQ Challenge

- ▶ **GRADE LEVELS:** 4-8
- ▶ **LOCATION:** In school and out of school
- ▶ **DESCRIPTION:** Provide the opportunity to learn introductory programming and engineering skills with a snap-together robotics system designed from the ground up.
- ▶ **WEBSITE:** <http://www.roboticseducation.org>

Computer Science

GRADE LEVELS: 6-10
LOCATION: In school

Discoveries



- ▶ **DESCRIPTION:** Inspire students as they build their own websites, apps, game and physical computing devices. This course takes a wide lens on computer science by covering topics such as programming, physical computing, HTML/CSS and data.
- ▶ **WEBSITE:** <https://newbo.co/code-org-partnership/>

STEM Innovator

- ▶ **GRADE LEVELS:** 6-12
- ▶ **LOCATION:** In school and out of school
- ▶ **DESCRIPTION:** Transform the classroom into incubator spaces where student teams solve real-world problems alongside industry mentors. This course prepares students with the skills and mindset to persist in STEM education, pursue STEM careers and become innovators of the future.
- ▶ **WEBSITE:** <https://jacobsoninstitute.org/STEM-Innovator>



Desmos Middle School Math

- ▶ **GRADE LEVELS:** 8
- ▶ **LOCATION:** In school
- ▶ **DESCRIPTION:** Desmos is a digital upgrade of the math curriculum by Illustrative Mathematics with the addition of engaging game-like feedback, a powerful activity dashboard and continuous professional development to support teachers.
- ▶ **WEBSITE:** bit.ly/desmos-iowa-sample

Bootstrap: Data Science

- ▶ **GRADE LEVELS:** 8-12
- ▶ **LOCATION:** In school
- ▶ **DESCRIPTION:** Students develop questions and learn how to analyze data critically to make meaning from the data. Flexibly designed for inclusion within courses such as math, computer science, business, and social studies.
- ▶ **WEBSITE:** <https://www.bootstrapworld.org/materials/data-science/>

CASE Agricultural Power and Technology

- ▶ **GRADE LEVELS:** 9-12
- ▶ **LOCATION:** In school
- ▶ **DESCRIPTION:** Immerse students in inquiry-based exercises that tie mathematics and science of agricultural mechanics and engineering. Students will apply technical skill while becoming competent in the process used to operate, repair, engineer, and design agricultural tools and equipment.
- ▶ **WEBSITE:**
<https://www.case4learning.org/curriculum/case-courses/agricultural-power-and-technology>

Computer Science

GRADE LEVELS: 9-12
LOCATION: In school



- ▶ **DESCRIPTION:** Introduce students to the foundational concepts of computer science and challenge them to explore how computing and technology can impact the world. This course is a rigorous, engaging and approachable exploration of the foundational ideas of computing.
- ▶ **WEBSITE:** <https://newbo.co/code-org-partnership/>

Project Lead The Way (PLTW) Cybersecurity

- ▶ **GRADE LEVELS:** 9-12
- ▶ **LOCATION:** In school
- ▶ **DESCRIPTION:** Introduce the tools and concepts of cybersecurity and encourage students to create solutions that allow people to share computing resources while protecting privacy. Students solve problems by understanding the vulnerability of computational resources and closing these vulnerabilities.
- ▶ **WEBSITE:**
<https://www.pltw.org/our-programs/pltw-computer-science-curriculum#curriculum-4>

VEX V5

- ▶ **GRADE LEVELS:** 9-12
- ▶ **LOCATION:** In school and out of school
- ▶ **DESCRIPTION:** Provide the opportunity to learn introductory and advanced programming and engineering skills with a snap-together robotics system designed from the ground up.
- ▶ **WEBSITE:** <http://www.roboticseducation.org>

Important Date to Remember

- ▶ **MARCH 2, 2020:** Applications close for 2020-21 STEM Scale-Up Programs

Support for Applicants

- ▶ One Page Program Summaries
- ▶ THE SCALE-UP APPLICATION
- ▶ Timeline, FAQ, 12 minute how-to video
- ▶ Contact your Regional Manager
 - ▶ Sarah Derry, SC Region Manager
 - ▶ Sarah.Derry@drake.edu
 - ▶ 515 271 2403