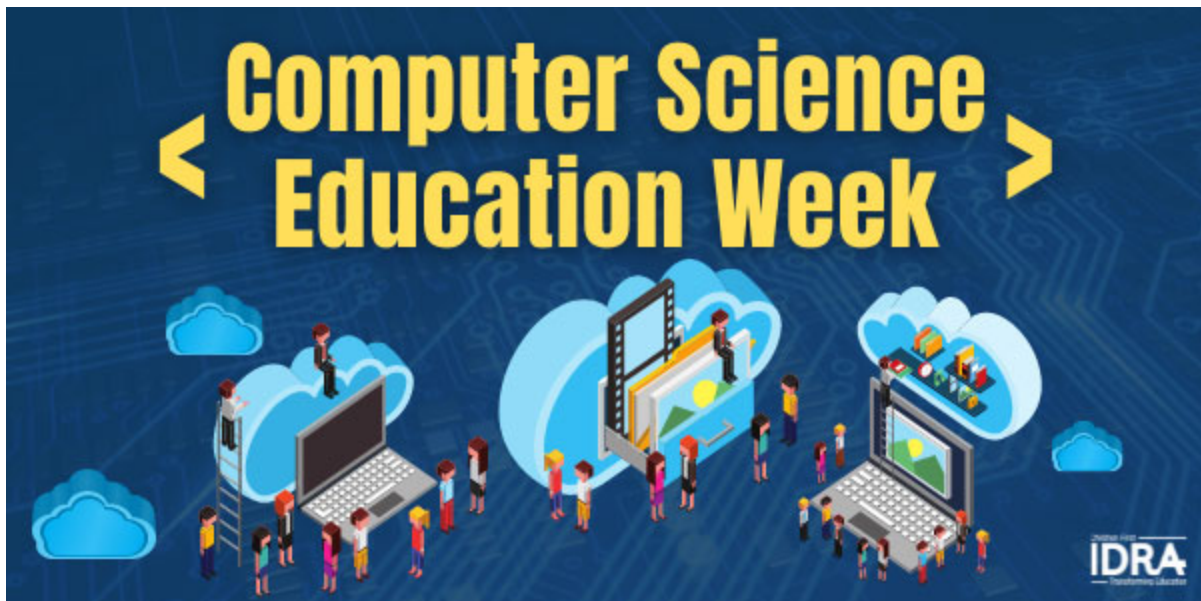SHARE:

View as Webpage

Visit Our Website

Computer Science Education Week is an annual call to action to inspire K-12 students to learn computer science, advocate for equity, and celebrate the contributions of students, teachers and partners to the field.
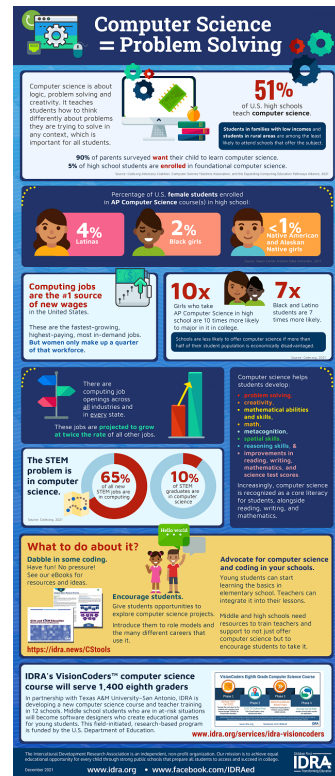
Computer science is about logic, problem solving and creativity.

It teaches students how to think differently about problems they are trying to solve in any context, which is important for all students.

Every student in every school should have the opportunity to learn computer science!

See our infographic below on the state of computer science education today.

Check out other resources and steps you can take this week!
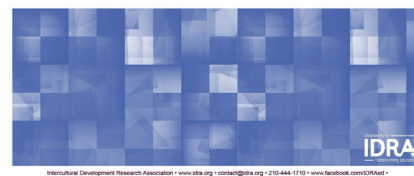

Resource eBooks

eBook: Computer Science Resources Overview

Lists guides, programs, resource lists, or models to help schools integrate computer science both in and outside the classroom.

eBook: Girls and STEM Education

Provides statistics, initiatives and organizations encouraging STEM, literature on how to support these promising students, and resources.

Key Resource Websites

The **CS Ed Week website** has virtual events this week along with teaching resources and profiles of computer science heroes.

Code.org is a nonprofit dedicated to expanding access to computer science in schools and increasing participation by young women and students from other underrepresented groups. It provides K-12 computer science curriculum and created the annual Hour of Code campaign that takes place during Computer Science Education Week.
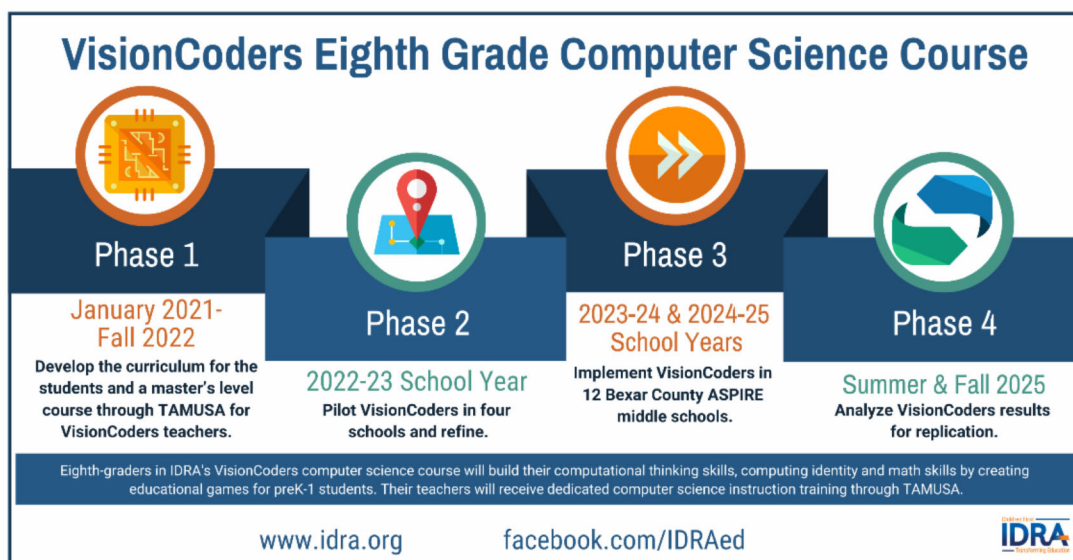
IDRA Developing Curriculum for Eighth Graders to Become Software Designers

San Antonio middle school students who are in at-risk situations will become the next generation of software coders through an innovative project called VisionCoders™, launched by IDRA and Texas A&M University-San Antonio.

We are designing an eighth-grade computer science course in which the VisionCoders students will create educational games for Pre-K to first grade students. The project will impact over 1,400 students in 12 schools in the seven Bexar County school districts that comprise the ASPIRE network. A&M-San Antonio founded that network in 2019 to accelerate locally-driven innovation and improve academic achievement for high-need students.

The project was kick-started by a $3.89 million, five-year Education, Innovation and Research grant from the U.S. Department of Education.

VisionCoders Eighth Grade Computer Science Course

Phase 1
January 2021- Fall 2022
Develop the curriculum for the students and a master's level course through TAMUSA for VisionCoders teachers.

Phase 2
2022-23 School Year
Pilot VisionCoders in four schools and refine.

Phase 3
2023-24 & 2024-25 School Years
Implement VisionCoders in 12 Bexar County ASPIRE middle schools.

Phase 4
Summer & Fall 2025
Analyze VisionCoders results for replication.

Eighth-graders in IDRA's VisionCoders computer science course will build their computational thinking skills, computing identity and math skills by creating educational games for preK-1 students. Their teachers will receive dedicated computer science instruction training through TAMUSA.

www.idra.org   facebook.com/IDRAed

Learn about IDRA's VisionCoders

More Good Stuff!

The latest research report on the status of computer science: **2021 State of Computer Science Education: Accelerating Action Through Advocacy**

Publications on **diversifying computer science**

Resources to aid school systems in strategically planning for computer science education:
- **The SCRIPT: Strategic CSforALL Planning Tool for School Districts**
- **Expanding Computing Education Pathways: State Summit Toolkit**
- **Code.org: State Computer Science Planning Toolkit**
- **Computer Science Teachers Association: Standards for CS Teachers**

Take a Break & Learn to Code
- **Take a Code Break**
- **Get Creative with Coding!**
- **Youth Code Jam - Spurs Give Coding Camps**

Order these STEM-CS Kits for Your Child or Classroom
- **Code
**
- **Black Wall Street Kids**
- **CIAS Game Development**

Hear What Students Have to Say

Six students spoke before a large crowd of educators and industry leaders at the STEM Learning Ecosystems Community of Practice Convening in March 2020. And they didn't hold back!

STEM Learning Ecosystems Community of Practice Convening, San Antonio, March 2020

I want more role models and women in STEM to look up... I only see males.

– Seventh-grader, Alicia describes how schools can change to encourage students in STEM fields

#STEMecosystems
@TexasCSO

STEM Learning Ecosystems Community of Practice Convening, San Antonio, March 2020

If you want to get more students involved in STEM, you need to create a world of wonder!

– Ninth-grader, Emmett encourages project-based learning to engage students in STEM.

#STEMecosystems

STEM Learning Ecosystems Community of Practice Convening, San Antonio, March 2020

Students have great potential to innovate and strive... Adults should have the mindset to be supportive and aid children when they are pursuing a higher level path.

– 10th-grader, Shreya speaks about helping students get over the "fear factor" of trying new things in STEM

#STEMecosystems
#TexasCSP

STEM Learning Ecosystems Community of Practice Convening,
San Antonio, March 2020

"It was destiny. It was a lunch date. A new hand, a new friend and a new perspective on life.

– Seventh-graders, Rey & Nathanael, speak about their introduction to STEM when they embarked on a project to create a robotic arm for Nathanael using a 3-D printer.

#STEMecosystems

IDRA

STEM Learning Ecosystems Community of Practice Convening,
San Antonio, March 2020

"If you know anything about us programers, you know we never give up!"

– 11-grader, Leslie calls for better integration of tech in all subjects, particularly to support girls.

#STEMecosystems
#YouthCodeJam

IDRA

New Infographic

Computer Science = Problem Solving

Computer science is about logic, problem solving and creativity. It teaches students how to think differently about problems they are trying to solve in any context, which is important for all students.

51% of U.S. high schools teach **computer science**.

Students in families with low incomes and **students in rural areas** are among the least likely to attend schools that offer the subject.

90% of parents surveyed **want** their child to learn computer science.
5% of high school students are **enrolled** in foundational computer science.

Source: Code.org Advocacy Coalition, Computer Science Teachers Association, and the Expanding Computing Education Pathways Alliance, 2021

Percentage of U.S. **female students** enrolled in **AP Computer Science** course(s) in high school:

4% Latinas

2% Black girls

<1% Native American and Alaskan Native girls

Source: Kapor Center Arizona State University, 2017

Computing jobs are the #1 source of new wages
in the United States.

These are the fastest-growing, highest-paying, most in-demand jobs. **But women only make up a quarter of that workforce.**

10x
Girls who take AP Computer Science in high school are 10 times more likely to major in it in college.

7x
Black and Latino students are 7 times more likely.

Schools are less likely to offer computer science if more than half of their student population is economically disadvantaged.

Source: Code.org, 2021

There are computing job openings across <u>all</u> industries and in <u>every</u> state.

These jobs are **projected to grow at twice the rate** of all other jobs.
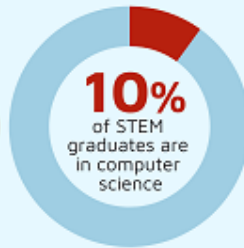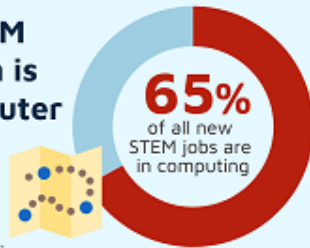
Computer science helps students develop:

- **problem solving,**
- **creativity,**
- **mathematical abilities and skills,**
- **math,**
- **metacognition,**
- **spatial skills,**
- **reasoning skills, &**
- **improvements in reading, writing, mathematics, and science test scores.**

Increasingly, computer science is recognized as a core literacy for students, alongside reading, writing, and mathematics.

The STEM problem is in computer science.

65% of all new STEM jobs are in computing

10% of STEM graduates are in computer science

Source: Code.org, 2021

Hello world

What to do about it?

Dabble in some coding.
Have fun! No pressure! See our eBooks for resources and ideas.

Encourage students.
Give students opportunities to explore computer science projects.

Introduce them to role models and the many different careers that use it.

Advocate for computer science and coding in your schools.

Young students can start learning the basics in elementary school. Teachers can integrate it into their lessons.

Middle and high schools need resources to train teachers and support to not just offer computer science but to encourage students to take it.

https://idra.news/CStools

IDRA's VisionCoders™ computer science course will serve 1,400 eighth graders

In partnership with Texas A&M University–San Antonio, IDRA is developing a new computer science course and teacher training in 12 schools. Middle school students who are in at-risk situations will become software designers who create educational games for young students. This field-initiated, research-based program is funded by the U.S. Department of Education.

VisionCoders Eighth Grade Computer Science Course

Phase 1 · Phase 2 · Phase 3 · Phase 4

www.idra.org · facebook.com/IDRAed

www.idra.org/services/idra-visioncoders

Follow us on Facebook and Twitter for the latest news!

The Intercultural Development Research Association is an independent, non-profit organization. Our mission is to achieve equal educational opportunity for every child through strong public schools that prepare all students to access and succeed in college.

Reach Out To Us

December 8, 2021