yesprep PUBLIC SCHOOLS

PROGRAMMING & CYBERSECURITY PATHWAY

Code Your Future

This pathway is for students who enjoy **problem-solving, technology, and understanding how computers work**. Students learn how to think logically, write code, and protect digital systems while building skills that are used in today's tech careers. Through hands-on coding projects, students grow from basic computer fluency to real programming and cybersecurity skills. By the end of the pathway, students are prepared for college computer science programs, certifications, and careers in programming, cybersecurity, and other technology fields.

WHAT STUDENTS GAIN

- Experiences that help students make informed college and career decisions
- Mastery of real-world programming languages, platforms, and cybersecurity concepts
- Opportunity to earn 2 industry-recognized certifications
- Portfolio of projects that showcase coding and system thinking
- Critical thinking, collaboration, and problem-solving skills

CLASSES YOU CAN TAKE

Level I	• **Principles of Information Technology** • **Fundamentals of Computer Science**
Level II	• **AP Computer Science Principles***
Level III (Advanced)	• **AP Computer Science A*** • **AP Seminar** (if research aligns to this pathway)

INDUSTRY-BASED CERTIFICATIONS (IBCS)

Earning an Industry-Based Certifications (IBC) or Certificates means has a student has learn specific skills and passes an exam or requirement that meets professional, industry standards. IBCs aligned to this pathway are:

* **PCEP™ – Certified Entry-Level Python Programmer**
* **Information Technology Specialist: Java**

CAREER-CONNECTED LEARNING EXPERIENCES

Work-Based Learning Activities	• Intern at a local IT company to develop skills in programming and coding • Shadow a software developer to learn how they create and improve software to support efficient processes at their company
Expanded Learning Opportunities	• Join a computer coding club • Attend a youth STEM conference • Participate in a coding hackathon or competition

Texas CTE Career Cluster: Information Technology

Texas CTE Programs of Study: Programming and Software Development, Cybersecurity

Endorsement: Successful completion will fulfill the requirements of the STEM endorsement if the math and science requirements are met or the Business and Industry endorsement.

EXAMPLE POSTSECONDARY OPPORTUNITIES

Associate Degrees
- Computer Programming
- Computer & Information Systems Security

Bachelor's Degrees
- Computer Science
- Data Science
- Computer Engineering

Master's, Doctoral, and Professional Degrees
- Management Science
- Computer Software Engineering
- Data Analytics

Additional Stackable IBCs/License
- Certified Ethical Hacker

- **Houston City College (HCC)** — Associates of Applied Science in Cybersecurity
- **University of Houston Downtown** — Bachelor of Science in Computer Science
- **Sam Houston State University** — Bachelor of Science in Computing Science

EXAMPLE CAREERS

Computer User Support Specialists
Median Wage: $58,621
Annual Openings: 6,387
10-Year Growth: 23%

Software Developers
Median Wage: $133,282
Annual Openings: 12,350
10-Year Growth: 47%

Computer Systems Analyst
Median Wage: $114,354
Annual Openings: 4,559
10-Year Growth: 30%

Computer Programmers
Median Wage: $99,177
Annual Openings: 657
10-Year Growth: 3%

Information Security Analysts
Median Wage: $115,042
Annual Openings: 1,760
10-Year Growth: 49%

Other Computer Occupations
Median Wage: $113,248
Annual Openings: 5,280
10-Year Growth: 29%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 1/25/2026

COURSE DESCRIPTIONS

COURSE	DESCRIPTION	PREREQUISITES
Principles of Information Technology J6010 (.5 credit)	Students build essentialtechnology skills in digital citizenship, file management, keyboarding, and productivity tools such as Word and PowerPoint. Daily practice builds fluency and prepares students for advanced programming and cybersecurity. • **Big idea:** Technology skills are transferable.	none
Fundamentals of Computer Science J5628 (1 credit)	Students learn core computer science and cybersecurity concepts by exploring online safety, coding, and problem-solving. Using Python, students learn to write and debug code using variables, conditionals, loops. Brief exposure to web languages like JavaScript, HTML, and CSS highlight how programming logic transfers. Students learn to think like a programmer, building skills that span various tech careers. • **Big idea:** Programming is about thinking logically.	Recommended: Algebra I
AP Computer Science Principles J5016 (1 credit)	Students build on their Python coding skills while learning how computer science impacts the world around them. Using Python, they work with data, write programs, use algorithms, understand abstraction, and solve real-world problems while exploring topics like ethics and responsible technology use. This course prepares students for advanced coursework, while strengthening confidence in coding and problem-solving. • **Big idea:** Programmers solve meaningful problems. • **IBC:** PCEP™ – Certified Entry-Level Python Programmer	Algebra I Fundamentals of Computer Science
AP Computer Science A Y9026 + Y9016 (2 credits) offered via YPOP	Students take on college-level computer science by designing and debugging Java programs using object-oriented principles, data structures, and structured problem-solving techniques. Students learn how to build efficient code that can grow and adapt. This course prepares students for advanced study in computer science, engineering, and other technology fields. • **Big idea:** Strong programmers design systems—not just code solutions. • **IBC:** Information Technology Specialist: Java • This course can count as 4th math credit if college-ready in math	Fundamentals of Computer Science, AP Computer Science Principles
AP Seminar J9015 (1 credit) *CTE Credit for enrollment SY25-26 and beyond*	This course is driven by student research, as students investigate complex issues, analyze sources, and communicate evidence-based arguments. Pathway credit is earned when projects align to programming, cybersecurity, and technology topics. • **Big idea:** Research informs solutions.	at least 1 credit in the pathway

PLAN YOUR PATH

	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
Example 1	**Principles of Info Tech** Algebra I	**Fundamentals of Computer Science**	**AP Computer Science Principles**	**AP Computer Science A**	
Example 2	**Principles of Info Tech**	Algebra I	**Fundamentals of Computer Science**	**AP Computer Science Principles**	**AP Computer Science A**

Taking Algebra I in 8th grade opens elective space in 9th grade, letting students begin their pathway earlier.

More Than One Way To Engage Students can take 1–2 courses to explore the pathway or go deeper by committing to a 2-4 year sequence and earning a distinction.

EARN CTE DISTINCTIONS

CONCENTRATOR

Earn at least 2 credits from 2+ courses in this pathway

ENDORSEMENT ("CTE COMPLETER")

Earn at least 4 total credits in the pathway by taking
- 3+ pathway courses
- 1+ advanced course

CAREER-READY GRADUATE

Earn:
- CTE Completer status (Endorsement)
- an IBC