yesprep PUBLIC SCHOOLS

# WEB & GAME DEVELOPMENT PATHWAY

## *Build What the World Sees*

This pathway focuses on the design and development of interactive digital products, including graphics, websites, and web-based games and develops technical and creative skills. Students ultimately use foundational coding concepts—such as variables, conditionals, loops, and functions—to modify and extend interactive experiences. Students design games by adjusting player movement, modifying game rules and scoring logic, adding timers, changing win/lose conditions, and incorporating simple animations or effects.

## WHAT STUDENTS GAIN

- Experiences that help students make informed college and career decisions
- Experience using real-world programming languages and design and programming software
- Opportunity to earn an industry-recognized certification
- A portfolio of projects showcasing coding, problem-solving, system thinking, creativity and design

## CLASSES YOU CAN TAKE

| | |
|---|---|
| Level I | • **Principles of Information Technology**<br>• **Fundamentals of Computer Science** |
| Level II | • **Digital Media** |
| Level III (Advanced) | • **Web Game Development*** |
| Level IV (Advanced) | • **Digital Design and Development Capstone**<br>• **AP Seminar** |

## 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. The IBC aligned to this pathway is:

* **Certified Entry-Level JavaScript Programmer**

## CAREER-CONNECTED LEARNING EXPERIENCES

| | |
|---|---|
| **Work-Based Learning Activities** | • Intern at a nonprofit or small business to support developing or updating their website and digital media<br>• Shadow a software developer to learn how they create and improve software to support efficient processes at their company |
| **Expanded Learning Opportunities** | • Create a website<br>• Join a related co-curricular or extracurricular club such as web development or computer coding |

**Texas CTE Career Cluster:** Information Technology

**Texas CTE Program of Study:** Web Development

**Endorsement**: Successful completion of the program of study 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**
- Web Publishing
- Mobile & Web Application Development
- Web/Multimedia Management

**Bachelor's Degrees**
- Computer and Information Sciences
- Information Technology

**Master's, Doctoral, and Professional Degrees**
- Computer and Information Sciences
- Computer Software Engineering

**Additional Stackable IBCs/License**
- HTML Developer

- **University of Houston–** Bachelor of Science in Digital Media, Bachelor of Science in Computer Science – Web & Application Development
- **Houston City College –** Associates of Applied Science in Digital Communication & Web Design
- **University of Texas Dallas -** Bachelor of Arts in Animation and Games

## EXAMPLE CAREERS

***Web & Digital Interface Designers***
*Median Wage: $99,934*
*Annual Openings: 971*
*10-Year Growth: 27%*

***Web Developers***
*Median Wage: $101,508*
*Annual Openings: 602*
*10-Year Growth: 33%*

***Computer and Information System Managers***
*Median Wage: $174,8546*
*Annual Openings: 5781*
*10-Year Growth: 38%*

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

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

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

# COURSE DESCRIPTIONS

| COURSE | DESCRIPTION | PREREQUISITES |
|---|---|---|
| **Principles of Information Technology**<br>J6010 (1 credit) | Students build essential technology 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.<br>• **Big idea:** Technology skills are transferable. | none |
| **Fundamentals of Computer Science**<br>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.<br>• **Big idea:** Programming is about thinking logically. | Recommended: Algebra I<br>(Digital Media and FCS can be taken in either order) |
| **Digital Media**<br>J5608 (1 credit) | Students explore the basics of visual design and digital media. They learn how images, color, text, and layout work together to communicate ideas. Using Adobe Photoshop, students create eye-catching projects like ads, posters, and digital graphics while building strong design habits.<br>• **Big idea:** Good design is intentional—every choice matters. | none<br>(Digital Media and FCS can be taken in either order) |
| **Web & Game Development**<br>J5020 (1 credit)<br>*Honors GPA Weight* | Students design and build web-based games by combining graphics, storytelling, and JavaScript programming. Coding logic controls gameplay, interactions, and outcomes in creative, interactive projects.<br>• **Big idea:** Creativity and coding work better together.<br>• **IBC:** Certified Entry-Level JavaScript Programmer | Fundamentals of Computer Science<br>Digital Media |
| **Digital Design & Development Capstone**<br>J5006 (1 credit)<br>*Honors GPA Weight* | This student-driven course allows students to plan, create, and present a portfolio of original projects. Students think and work like creative technology professionals—developing concepts, managing projects, documenting their design process, and clearly communicating decisions through code, visuals, writing, and presentation.<br>• **Big idea:** Developers communicate through code, visuals, writing, and presentation. | 3 courses from the list above, including Digital Media |

## PLAN YOUR PATH

| | 8th Grade | 9th Grade | 10th Grade | 11th Grade | 12th Grade |
|---|---|---|---|---|---|
| **Example 1** | **Principles of Info Tech**<br>Algebra I | **Digital Media** | **Fundamentals of Computer Science** | **Web & Game Development** | **Digital Design & Development Capstone** |
| **Example 2** | **Principles of Info Tech** | Algebra I | **Fundamentals of Computer Science AND Digital Media** | **Web & Game Development** | **Digital Design & Development Capstone** |

*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