Proposed K-8 Computer Science Standards

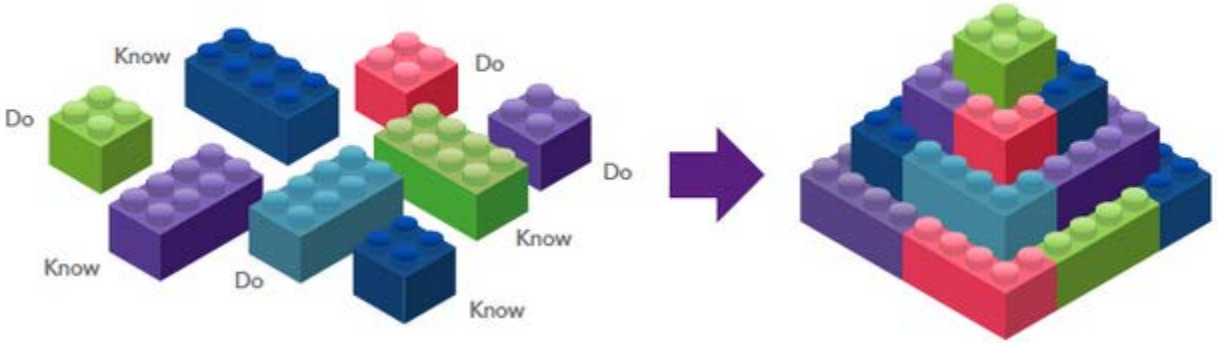
Brian Caine and Melissa Haun , April 2018

Research and Authoring

K12 Computer Science Framework

FRAMEWORK: KNOW, DO

STANDARDS: KNOW AND DO



Standards Writers' Experience

- Classroom Teachers
- Library/Media Specialists
- Curriculum Technology Teacher
- Director of Instructional Technology
- Director of Computer Science

101 years general education and technology education experience
(average = 16.83 years)

Computer Science Progression

Standards Model

Elementary School: Foundational Phase

- Recognize the importance of safe and responsible technology practices
- Develop problem solving and critical thinking skills
- Build basic coding and programming skills

Middle School: Exploration Phase

- Interact safely online and evaluate accuracy of online content
- Begin career exploration
- Develop computational thinking skills

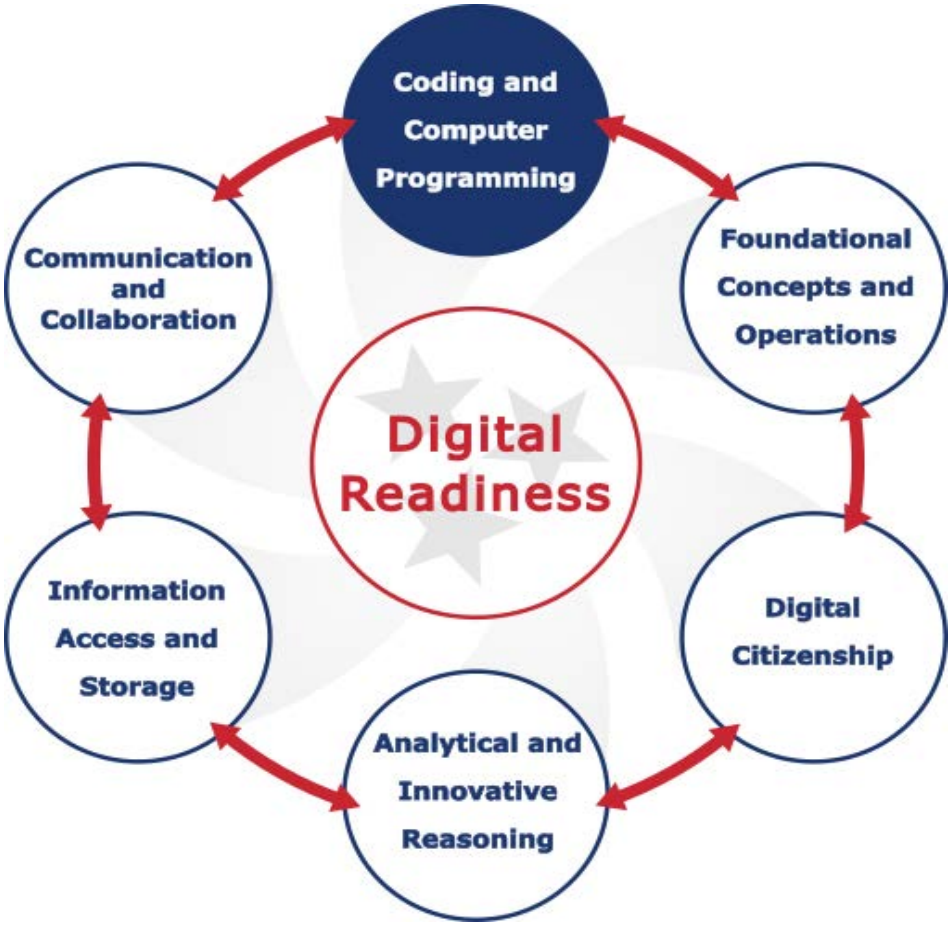
High School: Opportunity Phase

- Understand personal, career, and societal impacts of technology
- Apply coding skills to solve real world problems
- Attain industry specific skills

Current High School Computer Technology Courses

- Computer Applications
- Computer Literacy
- Computer Programming I
- Computer Programming II
- Interactive Multimedia Design
- AP Computer Science Principles

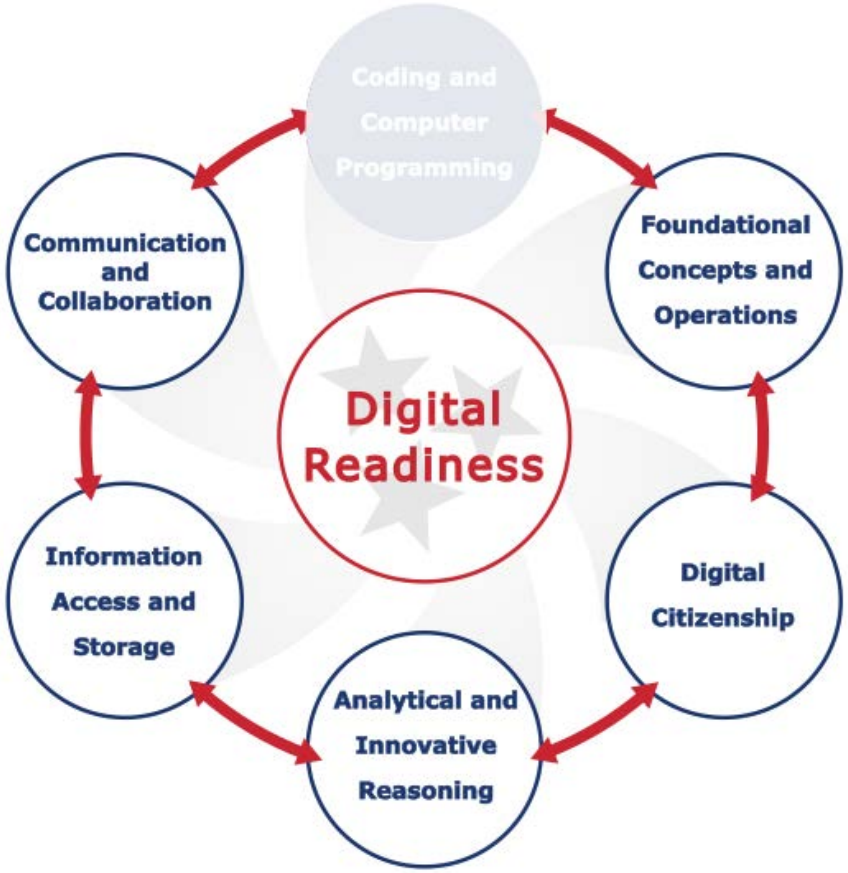
K-8 Computer Science Strands



K-8 Embedded Digital Readiness Strands

Embedded Strands

- 5 Strands that are implicitly encountered in general education courses as part of normal classroom activities.
  - E.g. turning on computer and using inputs.
  - Saving files



Structure & Progression of Embedded Strands

Computer Science Standards	Grade Level					Tennessee Academic Standards Connections Examples
	K	1-2	3-4	5-6	7-8	
FCO.1 Demonstrate fundamental technology skills (e.g. turn on and login to device).	I	I	R	M	M	In progress
FCO.2 Interact with a device using a pointing tool such as a mouse, tactile sensor, or other input.	I	R	R	M	M	In progress
FCO.3 Navigate to applications and documents by using desktop icons, windows, and menus.	I	I	R	M	M	In progress
FCO.4 Use age-appropriate online tools and resources (e.g. tutorial, assessment, web browser).	I	I	R	M	M	In progress
FCO.5 Demonstrate fundamental keyboarding skills.	I	I	R	R	M	In progress
FCO.6 Select and use appropriate word processing, spreadsheets, and multimedia applications.	I	I	R	R	M	In progress
FCO.7 Use menu, tool bar, and editing functions (e.g. font/size/style/line spacing, margins, spell check) to format, edit, save, and print a document.	I	I	R	R	M	In progress
FCO.8 Identify and solve routine hardware and software problems that occur during routine usage.	I	I	R	M	M	In progress

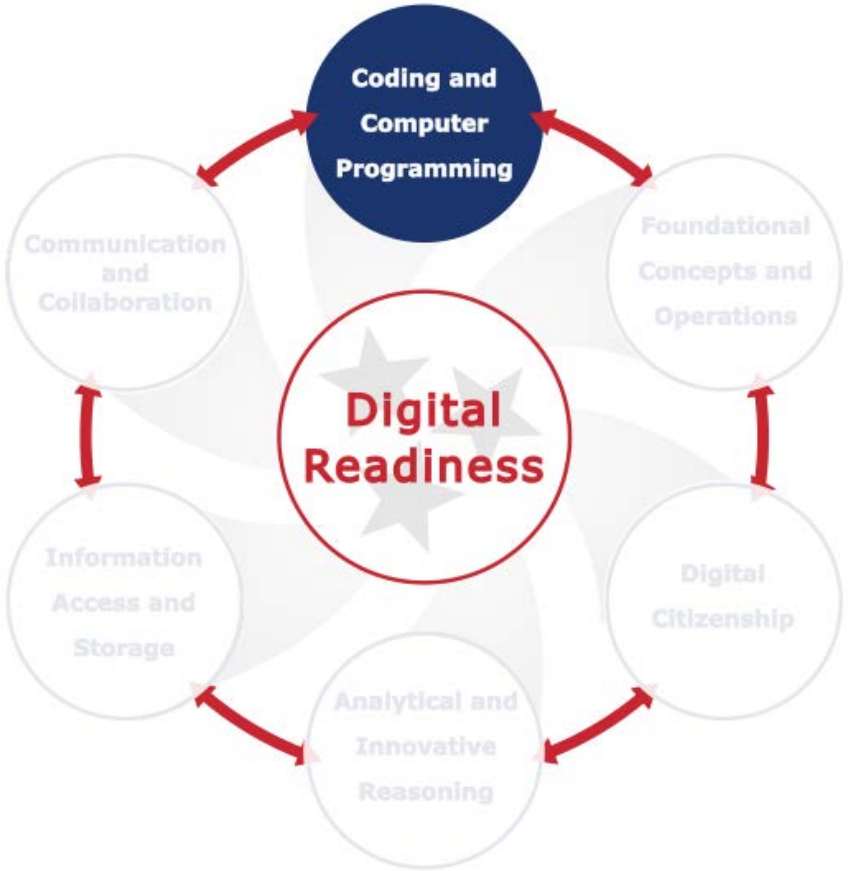
Standard Exemplar

- DC.4 – Recognize and describe the potential risks and dangers associated with various forms of online communications (e.g., cell phones, social media, digital photos).

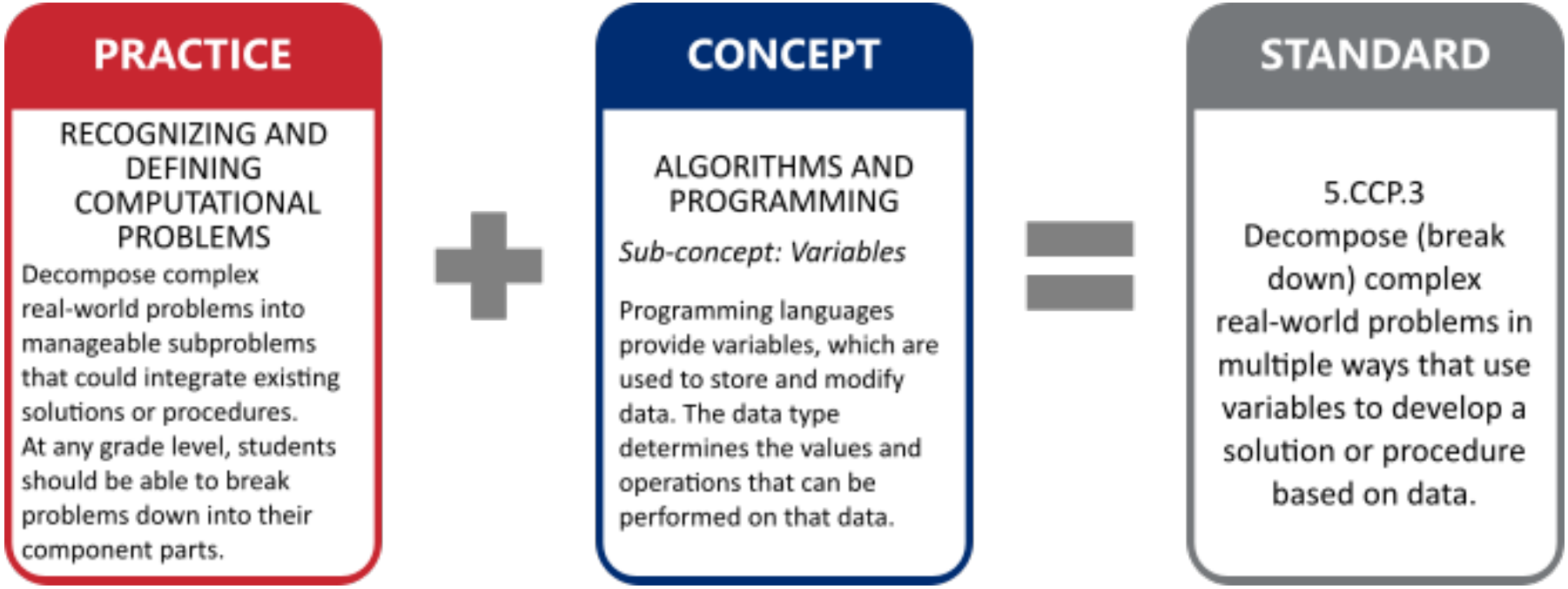
K-8 Coding and Computer Programming Strand

Coding and Computer Programming Strand

- 6th CCP Strand of standards developed to prepare students for HS opportunity phase where they will utilize foundational skills in industry specific manner.



Content and Authoring of CCP Standards



Questions?

Department of Education

Districts and schools in Tennessee will exemplify excellence and equity such that all students are equipped with the knowledge and skills to successfully embark on their chosen path in life.

Excellence | Optimism | Judgment | Courage | Teamwork