

Preparing Preservice Teachers to Teach Coding

“the thought processes involved in formulating a problem and expressing its solution(s) in such a way that a computer—human or machine—can effectively carry out.”

— Jeannette Wing

What is computational thinking?

European Countries with CT



AT, BG, CZ, CH, DK, EE, ES, FI, FR, HU, HR, IT, IE, LT, MT, PL, PT, SK, UK (England), UK (Scotland).

Coding in U.S. by state

k12cs.org

Framework for US CT standards

Coding Tools for Kids

<https://goo.gl/h5B5wB>

analytics: https://goo.gl/#analytics/goo.gl/h5B5wB/all_time

What do Preservice Teachers Need to know?

1. Learn to code
2. Create lessons
3. Integrate lessons

Fundamentals

"big ideas"	Coding concepts
Decomposition	procedures/commands
Pattern-recognition	conditionals
Abstraction	loops/iterators
Algorithms	functions
Analysis	variables

“Unplugged” lessons

<https://code.org/educate/curriculum/cs-fundamentals-unplugged>

Teaching the fundamentals can be done without a computer. code.org has a great set of unplugged lessons and lesson ideas.

Coding lessons

bootuppd.org/curriculum