The intention of the exploratory study is to better understand the current landscape of how elementary teachers engage students in the skills and concepts associated with computing, so that future implementation efforts are viable and improve teaching and learning in all disciplines.
Concerns for Careful CS Implementation

New computer science curriculum and mandates will likely have the unintended negative consequence of taking away from the already too little time on science and social studies.

![Graph showing changes in minutes of instruction per day for different subjects over years]

*Through Nov. 28

Illinois State Board of Education
Problem of Practice

FOSS Science Lesson

Students plant a miniature lawn in a cup of soil—rye grass seeds and alfalfa seeds. They draw, compare, and record the growth of the two plants over time.

CODE.ORG Lesson

In this lesson, students will relate the concept of algorithms back to everyday real-life activities by planting an actual seed.
How do computational thinking concepts align with those in elementary core disciplines?

How often and in what ways is CT currently being taught in grades K-5?

Which CT concepts and approaches more strongly correlate with which disciplines?

What teacher-level and school-level factors explain the use of CT across the curriculum?
Integration & Implementation

Retrieved from: https://digitalpromise.org/initiative/computational-thinking/

Experienced Teachers in New Positions

How long have you been an educator?
Answered: 103  Skipped: 22

How long have you been in your current position?
Answered: 103  Skipped: 23
Q39 How often have you participated in professional development on computer science, computing, or computational thinking?

- I have not had any...
- 1-3 hours
- 4-6 hours
- 7-10 hours
- 11-20 hours
- More than 20 hours
Stages of Concern: Pre-Post Survey

- "I've heard something about it, but other responsibilities take priority." - 0
  - Pre-Survey: 7.55%
  - Post-Survey: 7.34%

- "This seems interesting, and I would like to know more about it." - 1
  - Pre-Survey: 4.72%
  - Post-Survey: 12.64%

- "I'm concerned about the changes I will need to make in my routines." - 2
  - Pre-Survey: 9.43%
  - Post-Survey: 13.04%

- "I'm concerned about how much time it takes to get ready to teach with this new approach." - 3
  - Pre-Survey: 4.6%
  - Post-Survey: 13.79%

- "How will this new approach impact my students?" - 4
  - Pre-Survey: 10.38%
  - Post-Survey: 11.05%

- "I'm looking forward to sharing some ideas about it with other teachers." - 5
  - Pre-Survey: 6.6%
  - Post-Survey: 16.09%

- "I incorporate computational thinking skills into my lessons now and have ideas about how to do it better." - 6
Time Teaching CT in Elementary

- Most lessons each day: Pre-Survey 11.65% | Post-Survey 22.73%
- A few lessons each day: Pre-Survey 22.33% | Post-Survey 20.45%
- A few lessons each week: Pre-Survey 24.27% | Post-Survey 34.09%
- A few lessons each month: Pre-Survey 21.36% | Post-Survey 10.23%
- A few lessons each year: Pre-Survey 10.68% | Post-Survey 6.82%
- Never: Pre-Survey 9.71% | Post-Survey 5.68%
Awareness is just the first step....

By better understanding how CT concepts and approaches integrate authentically into math, science and other subjects, policymakers and district leaders can be more intentional in supporting both teachers and students to develop an understanding of core computing skills that will provide a strong foundation for further computer science applications.