“Learning Trajectories for Everyday Computing” (LTEC) at the Illinois Council of Teachers of Mathematics, Peoria, IL, October 18–19, 2019

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LTEC
- NSF STEM+C research project (awards #1542828 & #1742466)
- Currently in Year 4 of 5
- Developed learning trajectories (LTs) for computational thinking (CT) at the elementary level
- Used those LTs to design, develop, and test a sequence of interdisciplinary math + CT activities for grades 3 and 4
- Activities built using Scratch and a Common Core aligned mathematics curriculum (Everyday Mathematics)
- Testing in small number of G3 & G4 classrooms in 2019–2020

A continuum of integration, adapted from Vasquez, Sneider, and Comer (2013)

**Debugging LT**
10: Outcomes can be used to decide whether or not there are errors.
3: Iterative refinement can help fix errors.
4.1: Compile errors should be fixed in the order the compiler reports them.
3.1: Small errors can change outcomes.
8: Reproducing a bug can help find and fix it.
4: Intermediate results can help find and fix errors.
5: Step-by-step execution of instructions can help find and fix errors.
9: Errors can be caused by missing, as opposed to incorrect, information within instructions.
2: Errors play a valuable role in problem solving.
7: Code can always be improved, but may not be worth the effort.
6: Debugging strategies can be chosen strategically.

**Fraction Circles 1**
https://scratch.mit.edu/projects/211001031

**Fraction Number Line**
https://scratch.mit.edu/projects/282816475

**Fraction Words**
Fraction Circles 1
- five-eighths
- two-thirds
- five-sixths

**Fraction Number Line Exploration**
http://www.canonlab.org/actionfractionslessons

**LTEC: Learning Trajectories for Everyday Computing**
http://everydaycomputing.org

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